ED 030 473 24 PS 001 789
By-Barclay, Lisa Frances Kurcz
The Comparative Efficacies of Spanish, English and Bilingual Cognitive Verbal Instruction With Mexican-American Head Start Children. Final Report.
New Haven Unified School District, Union City, Calif.
Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.
Bureau No-BR-7-1035
Pub Date Jan 69
Grant-OEG-1-7-070035-3871
Note-304p.
EDRS Price MF-$1.25 HC-$15.30
Descriptors-*Bilingual Education, English (Second Language), *Experimental Programs, Instructional Programs, Language Programs, Lesson Plans, *Mexican Americans, Preschool Curriculum, *Preschool Programs, Program Descriptions, *Program Effectiveness, Second Language Learning, Summer Programs
Identifiers-Barclay Test, *Head Start, ITPA, Peabody Picture Vocabulary Test, PPVT, Templin Darley Test of Articulation, Vance Language Skills Test

Sixty-seven Mexican-American children were administered a special 7-week Head Start language training program during the summer of 1967. Three basic treatments were used, and there was a control group. Two teachers were used, thus raising the number of groups to eight. The three basic treatments involved a structured English language training program; in one group, Spanish was the language of instruction, in a second group, English was the instructional language, and in the third, both languages were used. The control groups received the usual preschool art and music activities. Tests were administered at the beginning of the program, at the end, and the next spring. It was found that (1) since the groups were initially of varying ability, final differences in performance could have been due to this initial difference, (2) the teacher factor, sex factor, and age factor contributed nothing to the results, (3) the structured language treatments did not produce better scores than the control treatment; and (4) the bilingual treatment was not significantly superior to the Spanish or English treatment. (WD)

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THE COMPARATIVE EFFICACIES OF SPANISH, ENGLISH AND BILINGUAL COGNITIVE VERBAL INSTRUCTION WITH MEXICAN-AMERICAN HEAD START CHILDREN

Final Report
Project No. 7-1-035
Grant No. OEG-1-7-070035-3871

Lisa Frances Kurcz Barclay

January 1969

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

PS 001789

NEW HAVEN UNIFIED SCHOOL DISTRICT

Union City, California, 94587

ACKNOWLEDGMENTS

The completion of this study was possible only with the help and cooperation of many individuals and organizations. I would like to express my thanks to Dr. John Krumboltz, Dr. Henry McDaniel and Dr. Robert Politzer, all of Stanford University for their advice and aid, to the New Haven Unified School District for the use of its facilities and students in the experimental study, and to Dr. Edith Trager of San Jose State College for help with the development of curriculum and tests.

The United States Office of Education granted the financial aid that made the study possible. Earlier the United Cerebral Palsy Research and Educational Foundation had provided me the means to attend graduate school. Thanks are due both these organizations.

I would also like to thank my associates in the study, Elva Cooper, Susan Rodriguez-Bascur, and Edgar Gallardo, for their generous cooperation and effort.

Finally, I would like to thank my family for their encouragement and forbearance during these hectic months. A particular debt of gratitude is owed to my husband, James, and my children, Anne, Robert, Gregory, and Christopher.

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CHAPTER I

INTRODUCTION

This study focused on a group of Mexican-American and native English speaking children living in the New Haven Unified School District. Many of these children are marginally bilingual or speak no English at all when they first attend school. Even in Spanish the Mexican-Americans show severe language deprivation - sometimes even more so than in English. A local study in the New Haven School District utilizing both English and Spanish versions of the Peabody Picture Vocabulary Test has shown that these children average 12 points lower on the Spanish than on the English version (Leppke, 1966). Even the native English-speakers have severe language handicaps when compared to more advantaged students.

This study addressed itself to the learning problems of a group of children in the New Haven Unified School District who were enrolled in a seven-week Head Start program during the summer of 1967. It entailed work with samples of Spanish-speaking and bilinguel children using three different treatment procedures during part of each school day. Briefly, these treatments consisted of a variety of language training sessions using either English, Spanish, or both languages as the vehicles of instruction. The children were followed up using a variety of tests and classroom observations both at the end of the seven week period and also toward the end of the next school year, to determine which if any of these methods holds the greatest promise for preparing Mexican-American children for academic competence in the elementary school.

The Problem

There is widespread concern today with the learning lag which occurs in children who are culturally disadvantaged. These children who are often from low-income families and may belong to minority groups in the population do not appear to profit from the school curriculum to the extent that other children do. For this reason, one strategy for coping with these children has been to enrich their early experience through programs such as Head Start. Follow-up studies of Head Start and other pre-kindergarten programs designed for the disadvantaged have often shown that while there may be great temporary improvements in both the behavior and classroom performance of these children, the results begin to "wash out" so that often no discernible difference remains between children who have had Head Start experience and those who have not by the time they finish kindergarten (Gray, Klaus, Miller & Forrester, 1966; Lindquist, 1967; Weikart, Kamii & Radin, 1964).

Though one hypothesis for the fading of early gains may be the failure of the primary grades to sustain the kinds of activities begun in Head Start, another hypothesis may be formulated relating to the kinds of activities designed in such early programs. Tyler (1956) pointed out that various strategies have been adapted in child development theory for coping with the curricular needs of children. One of the current approaches to child development has been centered on the use of play activities, self-concept development, and general "adjustment" techniques. This particular view has permeated much of the prekindergarten activities sponsored in official programs.

A newer approach to the learning difficulties of culturally disadvantaged children has recently been developed. This approach is based on the child developmental theory of Piaget insofar as the child's learning is presumed to proceed through epistemological states, and combines with this view a cognitive approach to learning. Ausubel (1963) has suggested that the primary skill in school learning is centered on concept formation. Opposing the traditional assumption regarding learning--i.e., that abstract concepts are built on a long chain of inductive experiences with concrete phenomena, he boldly states that this experience is time-consuming and ignores the fundamental component for concept formation.

He says that "most of the understandings that learners acquire both in and out of school are presented rather than discovered" (Ausubel, 1963, p. 16). He defines reception learning as the kind of learning in which ". . . the entire content of what is to be learned is presented to the learner in final form" (Ausubel, 1963, p. 16). That is, the learner is not left to discover for himself by trial and error, but has to internalize the material or subsume it into his cognitive organization.

Ausubel says that in discovery learning the learner must independently discover the principal content of what is to be learned before it can be internalized, while in reception learning he is only required to internalize what is presented; thus the beginning processes of the two are quite different. He suggests that all discovery learning is not necessarily meaningful, and that, while rote learning is a form of reception learning, reception learning should and can be meaningful.

Ausubel does not deny the efficacy of the inductive method in learning, i.e., learning through experience and drawing generalizations from experience. But he insists that far too seldom do teachers recognize the importance of cognitive organizers in providing the adequate intellectual scaffolding necessary in the combining of thought elements. Furthermore, he states that reception learning is appropriate for children, if it be recognized that abstraction must be minimized because the child's cognitive structure does not contain as many abstract concepts upon which to build further ones.

> Even though the initial emergence of abstract meanings must be preceded by an adequate background of concrete-empirical experience, once satisfactorily established, abstract concepts and propositions enjoy a very stable existence.... Children's learning of new verbal material can therefore proceed in much the same manner as in adults as long as proper allowance is made for the fewer number of higher-order abstract concepts and truly abstract propositions in cognitive structure, and for the need for concrete-empirical experience in acquiring abstract concepts and propositions (Ausubel, 1963, pp. 55-56).

He suggests that concept formation is related directly to two major factors: (1) the clarity of the organizer, which he defines as the scaffolding of the verbal structure, and (2) the psychological readiness of the subsumer, i.e., the receiving organism. Ausubel strongly advocates that teachers concentrate on the major "big" ideas and then systematically explain the portions of each of these ideas until each becomes an organized unit within the mental structure of the student. If Ausubel is correct, then the emphasis on a long chain of inductive procedures as found in most present day teaching places the burden of abstraction or ultimate conceptual organization on the individual student. In the case of children who do not have verbal facility or who do not have a verbal repertory sufficient for this purpose, this task becomes an insurmountable one. As a result, the concrete learning obtained in a typical child developmental approach to early education becomes

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free-floating discrete segments of experience not integrated into the developing organization of mental processes.

Ausubel's theory is closely paralleled by the earlier work of Vygotsky (1962) wherein verbal behavior has been seen as a necessary prerequisite for social or motoric behavior. Children are often observed in a task telling themselves verbally what they must do and then proceeding to action.

Vygotsky states that while initial experiences are largely sensory, as language develops, language comes to mediate both thought and action. Thus speech, oral or internalized, ". . . becomes an instrument of thought in the proper sense--in seeking and planning solutions to a problem" (Vygotsky, 1962, p. 16).

> All the higher psychic functions are mediated processes, and signs are the basic means used to master and direct them. The mediating sign is incorporated in their structure as an indispensable, indeed the central, part of the total process. In concept formation, that sign is the word, which at first plays the role of means in forming a concept and later becomes its symbol....Concept formation is the result of a complex activity in which all the basic intellectual functions take part. The process cannot, however, be reduced to association, attention, imagery, inference, or determining tendencies. They are all indispensable, but they are insufficient without the use of the sign, or word, as the means by which we direct our mental operations, control their course, and channel them toward the solution of the problem confronting us (Vygotsky, 1962, p. 56, p. 58).

His formulation of the role of instruction in the school setting appears close to that of Ausubel. He says that all school learning has the same psychological prerequisities, and that instruction in any subject influences the development of higher functions that relate to other subjects as well. "It follows from these findings that all the basic school subjects act as formal discipline, each facilitating the learning of others: the psychological functions stimulated by them develop in one complex process" (Vygotsky, 1962, p. 102). "Therefore the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as at the ripening functions" (Vygotsky, 1962, p. 104).

One can hypothesize that an insufficient verbal repertory leads to negative attitudes towards the frustrations of the early curriculum. If this be so, the learning contingencies become, predisposed to creating frustration and personal rejection of learning. Children who have not obtained a verbal background from their home, or who are accustomed to more non-verbal communication than highly verbal communication, will have to have special training in cognitive concept formation in order to bridge the cultural gap. This appears to be a defensible rationale for both Negro children, Mexican-American children, or urban white children who are recent emigrants from Appalachia or the deep South. There is a lack of congruence between the total cultural learning pattern of certain segments of American society and the verbal task oriented achievement learning fostered by the curriculum of the traditional American School. If this is so, enrichment alone will not prepare children adequately, but a strategy combining enrichment with a specific focus on the development of conceptual cognitive skills may have greater results.

Current research (Corbin & Crosby, 1965; Gray, et al., 1966; Weikart, et al., 1964) indicates that the learning problems of disadvantaged children in the school setting are based primarily upon poorly developed cognitive language skills and the inability to use language as a communicative tool, and upon insufficient motivation, primarily based upon the lack of meaningful reinforcers in the school situation. In addition, teachers are in many instances unaware of the social, cultural, family and community backgrounds of the children they teach, and how they may affect the child's attitude and performance in the classroom.

Lack of sufficient language development to enable him to comprehend and compete in the extremely verbal school situation seems to be the primary barrier to the disadvantaged child. This is especially true for the Mexican-American child, for whom English may be a foreign language, or who may have a very sketchy command of both English and Spanish, with little facility in transferring meaning from one to the other. The language deficiencies of lower class children have been amply demonstrated. Bernstein (1961, 1962) has posited the theory that lower class children learn only a public language, entailing restricted linguistic codes and limited sentence and grammatical structures. By contrast, middle class children learn in addition a formal language, in which elaborated linguistic codes and a great variety of grammatical constructs are used, and in which language becomes an object of perceptual activity toward the clarification of meaning. His studies comparing middle and lower class children have given support to this theory. Similarly, Bruner (1964) posits cognitive development as taking place in three successive representational stages dealing with the processing of information: the enactive, iconic, and symbolic, dependent upon and transmitted by the culture in which the child grows up. The question can be raised whether the cultural environment of the disadvantaged child permits him to develop to the third or symbolic stage in his language development. The National Council of Teachers of English Task Force on Teaching English to the Disadvantaged (Corbin & Crosby, 1965) in a nationwide study has found that language and conceptual skills represent the two most important deficits of disadvantaged children. Black (1965) cites the fact that disadvantaged children learn even common words such as "sink" or "sandwich" a year or two later than middle class youngsters, and do not perceive the concept that objects have names and that the same objects may have a variety of different names. Tyler (1967) estimates that the disadvantaged child knows from 500 to 1,000 words when he begins school; by contrast the middle class child knows between 5,000 and 25,000 words.

In addition to these linguistic problems that he shares with other disadvantaged youngsters, the Mexican-American child has the unique one of bilingualism as well. The vast majority of disadvantaged Mexican-American children learn at least some Spanish at home from their families. In many instances it is the only language the child knows until he reaches school. At school, if not sooner, English must be learned also. Thus most disadvantaged Mexican-American children become bilingual at some time during their school career, if not earlier. The linguistic and psychological problems that may be concomitant with bilingualism will be discussed in detail below.

Related Research

1. Bilingualism. Many of the studies of bilingualism have been devoted to older children, college students and adults. There is a paucity of studies dealing with bilingualism in young children. Many studies have been devoted to comparisons of monolinguals and bilinguals on the factors of verbal and non-verbal intelligence (Diebold, 1966; Peal & Lambert, 1962). The results of most of these studies are generally suspect, inasmuch as socioeconomic standing and the relative status of the linguistic groups were not controlled. Where these factors were controlled,

bilinguals surpassed monolinguals in intelligence (Peal & Lambert, 1962). Other studies have been concerned with reaction time (Lambert, 1955), word association (Lambert, 1956; Lambert & Moore, 1966), recognition threshold, word completion, word recognition, and reading speed (Lambert, Havelka & Gardner, 1959). But very little seems to have been done to study concept formation and other cognitive behaviors in bilinguals (Diebold, 1966).

Cultural influences upon language development have been studied and discussed in a number of instances. Second-language learning results in acculturation to a second linguistic-cultural community, which in turn may lead to either a broadened cultural experience or to anomie or alienation from both cultures (Lambert, 1956). The determinants here seem to be both the attitude of the individual, and the relative status positions of both language groups within the cultural community. Thus, the attitude an individual has toward the group represented by the second language seems to affect the success he has in learning the new language and the extent to which he uses it (Child, 1948; Lambert, 1963). A study of ten year old French-Canadian children showed that bilinguals had more favorable attitudes toward and identified more with the English-Canadian community than did their monolingual schoolmates (Peal & Lambert, 1962). Furthermore, the cultural factors within an ethnic group may have as much influence as the linguistic ones in determining the choice of words used by individuals (Lambert & Moore, 1966) and the individual's own experience in language acquisition may invest particular and quite different meanings and emotional connotations to supposedly equivalent words in two languages (Lambert, Havelka & Crosby, 1958).

If cultural and attitudinal factors influence second-language learning among high school and college foreign language students or in legally bilingual areas such as Eastern Canada or Wales, they can certainly be expected to play an even greater part in language learning among lower status, more recently arrived ethnic minority groups. (Even though Spanish settlement of the American Southwest predates the coming of English-speaking people, the vast majority of disadvantaged Mexican-American children are either newly arrived in the United States or are the children of fairly recent immigrants, and thus can be classed in this category.) The Mexican-American child is probably in the position described by Diebold; a position of

> . . . crisis in social and personal identity engendered by antagonistic acculturative pressures directed on a bicultural community by a sociologically dominant monolingual society within which the bicultural community is stigmatized as socially inferior and to which its bilingualism (historically reviewed) is itself an assimilative response (Diebold, 1966, p. 25).

The few studies that have been done with Spanish-speaking minority children in the United States seem to support this point of view.

Holland (1966) who worked for many years as a school psychologist with Mexican-American children has found that these children know even fewer of the complex language symbols than do monolingual disadvantaged children. Their knowledge of either language is considerably below the language level of monolinguals, and their ability to deal with abstract concepts is much more retarded. They appear unable to relate the concepts they learn in English back to Spanish, and thus end up with a conglomeration of two badly learned languages instead of being proficient in either one. Anastasi and Cordova (1953) in studying intelligence test performance of Puerto Rican children contrast linguistic bifurcation, where one language develops for one set of circumstances and the other for another, with true bilingual parallelism, in which an individual can express himself in all kinds of circumstance in one language and then learns the other to also apply in all circumstances. They posit that most Puerto Rican children represent the former rather than the latter type of bilingualism. This would appear to be the case with the Mexican-American child as well.

2. Preschool Curricula. A number of different curricular approaches have been tried in Head Start and in similar preschool programs for disadvantaged children with varying levels of successful outcomes. The earliest, most obvious, and ultimately least successful approach entailed

adapting the curriculum that had been used during the 1950's with predominantly middle class nursery school youngsters. With some variation dependent upon the personal preferences of individual teachers and parents, this nursery school curriculum stressed the learning of motor skills and development of manipulatory skills, the establishment of routine habits of cleanliness and self-care, learning self-control and situationally appropriate behavior, appropriate psychosexual development, and language and intellectual development including concept formation and self-understanding (Sears and Dowley, 1963).

While teachers did notice some children interacting more with others and verbalizing spontaneously with slightly greater frequency, this approach did not provide children with the means to compete successfully with their more advantaged peers in the school situation (Bereiter & Engelmann, 1966b; Lindquist, 1967). Thus the National Council of Teachers of English Task Force on Teaching English to the Disadvantaged noted in its 1965 report that:

> Far too many of the preschools visited ... seem little more than substitute middle class home environments for fifteen or twenty children . . . . Many preschool curriculum guides read like a text for college level family living courses stressing such objectives as the development of small and large muscle coordination . . . . These objectives are important, but they are not sufficiently important to justify the attention that they receive in nearly all preschools for disadvantaged children . . . . The step still to be taken in many programs is to select for intensive

> work those objectives for preschool programs which attack the deficits which are most crucial for school success (Corbin & Crosby, 1965, p. 64).

Because of the lack of success of programs based primarily on middle class nursery school curricula, a number of programs designed specifically for use with disadvantaged children have been developed and implemented in recent years. Rather than stressing the social, emotional and motor development of the child, the areas of major emphasis of traditional programs, these new programs for the disadvantaged have come to focus upon cognitive and language development. Since it is in these areas that the disadvantaged child is most severly limited when compared to more advantaged children, the decision has been made to concentrate attention upon them, and to give lower priority to the social, emotional, and motor areas.

The preschool programs designed specifically for disadvantaged children can be divided into three general categories: 1) structured nursery school approaches, in which the materials and some of the methods of the traditional nursery school are used, but in which there is emphasis upon language and cognitive development and in which the teacher carefully structures the environment to insure that this development takes place; 2) task-oriented approaches, in which carefully prepared teaching sequences are presented by the teacher in order to meet specifically set objectives and in which the usual nursery school materials are either not used or at least greatly deemphasized (Weikart, 1966); and 3) behavior modification models, in which either of the other two approaches may be utilized to some extent, but which depend upon the systematic use of reinforcement techniques for producing the major portion of the desired behavior change in the direction of language and cognitive development in children. Studies conforming to each of these three basis orientations in turn will be discussed here.

Weikart, Kamii, and Radin (1964; Weikart, 1966) have used the structured nursery school approach in a preschool program for disadvantaged Negro youngsters in Ypsilanti, Michigan. The study focused on four distinct groups: 13 four year olds who entered the nursery school in the fall of 1962 and remained in it for one school year before entering kindergarten, 10 three year olds who entered at the same time but spent two school years in the nursery school before entering kindergarten, 13 three year olds who entered the next fall and remained for two years, and finally 13 three year olds who entered in the fall of 1964 and also remained for two years before kindergarten entrance. Each group of children was matched with a comparison group in the same community on the basis of Stanford-Binet IQ and a rating scale of cultural deprivation developed by the experimenters. The comparison groups did not attend preschool but entered kindergarten at the same time as their respective experimental groups.

The unique feature of the educational program employed in the study was the large amount of verbal interaction between teacher and students that was elicited. Adults talked to the children over long periods of time, encouraging and almost forcing responses. Teachers directed comments and questions at each child in turn almost continually throughout the school day, in a process referred to by the experimenters as "verbal bombardment" (Weikart et al., 1964). The study also included numerous field trips by the children, and regular home visits to their mothers by the preschool staff.

Experimental and comparison children were tested at the end of the preschool period and again at the end of kindergarten on the Stanford-Binet. The reported results showed statistically significant differences in favor of the experimental groups at the end of either the one year or the two year preschool experience, but no significant differences at the end of the kindergarten year. Thus, on the basis of Stanford-Binet IQ, either the experimental children lost ground during kindergarten, or else the kindergarten experience enabled the comparison children to catch up to some extent. California Achievement Test data at the end of the first grade, however, suggests that some differences do remain between experimental and comparison children at that stage. The group mean for the experimental children from the first year's group was at the 22nd percentile on national norms, while that for comparison children was at only the 5th percentile.

Since this study did not randomize the total available subjects into experimental and control groups but instead chose to use matched comparison groups, the generalizability of results is open to question. Groups were quite small (the comparison groups ranged from 9 to 15 subjects), and the educational program changed somewhat as it evolved from year to year. Thus comparisons between successive groups are difficult to make. The study appears to demonstrate that children exposed to either one or two years of this type of preschool have significantly higher Stanford-Binet IQ than matched children not in preschool, but that these differences diminish as the children attend kindergarten. Achievement test differences do persist at least as far as the end of the first grade. It would seem that the efficacy of this program will not be open for judgment until either long-term followup studies of the groups of children are made and reported, or preferably new studies of subsequent children with adequate controls and a wider range of tests are done.

Another preschool study within this first approach was done by Gray and her associates (Gray & Klaus, 1965; Gray et al., 1966) at George Peabody College for Teachers. In this, the Early Training Project, 60 Negro children in

Murfreesboro, Tennessee, considered disadvantaged on the basis of poor housing, low income, parental education level below the eighth grade, and employment of parent or parents at the unskilled or semiskilled level, were chosen for the study. This group was randomly divided into three groups of 20 children each. The first of these had two summers of preschool, as well as weekly home visits by a project worker during the intervening year and the year between preschool and first grade (there evidently was no kindergarten in this school system). The second group had three summers of preschool and three years of home visits. The third or control group had no home visits and no preschool, except for a brief play-school experience the last summer done for the sake of public relations. In addition, since the experimenters felt that in a closely knit community such as this parents might find out from each other what was being done with the children who were in preschool and attempt to replicate it with those who were not, a distal control group in a city 60 miles away was utilized to control this factor of leakage or diffusion of treatment effects. This group was matched to the other children on the same criteria for inclusion in the program, but it was in no way a randomized control group.

The summer preschool program concentrated on the development of both aptitutes and attitudes, including ability to delay gratification, persistence in a task, motivation for achievement, and the increase of conceptual and linguistic competence. Since the criterion test instruments used were the Stanford-Binet and later the Wechsler Intelligence Scale for Children (WISC), the Peabody Picture Vocabulary Test (PPVT), and the Illinois Test of Psycholinguistic Abilities (ITPA), which measure only some but not all of these areas, it is difficult to ascribe success or failure to the program solely on the basis of test results.

The testing schedule consisted of pretesting each of the four groups at the beginning of each summer that the program was in operation, posttesting at the end of each summer, and followup testing during the winter of the years that the children were in first and second grade. Because children were tested so frequently on the Stanford-Binet, the WISC was substituted in later test batteries. Results reported when the study was partially completed (Gray & Klaus, 1965) showed that after five testings, that is, at the beginning of the third summer, the scores of experimental children had increased and those of control children had declined so that significant differences between means appeared on the PPVT and the Stanford-Binet. On the ITPA, significant differences in favor of the experimental children were found on all except one subtest. (The study does not specify whether these results were obtained for all experimental vs. all control children, or only for selected groups.) The final report (Gray et al., 1966) showed that the experimental group with three summers' experience in preschool had gained a mean of 9 IQ points, that with two summers' experience had gained 5 points, the local controls had lost 3 points, and the distal controls had lost 6 points. Whether these differences are significant is not stated, nor is it reported on which test these results were obtained.

Because of the paucity of reported test results and because the tests measured only some aspects of the total objectives of the study, a critical evaluation of the Early Training Project is difficult to make. Evidently attendance at preschool and the use of weekly visitors does make some difference in children's tested IQ, and the longer the experience the greater the difference. Beyond this, no useful generalizations can be made.

Two additional studies that seem to fall within the category of a structured nursery school approach were done by doctoral students at Stanford University. Ametjian (1965), working with disadvantaged children in an experimental preschool that continued for six months and using a language curriculum she developed, found significant differences on her own test favoring the experimental children over randomly assigned controls who had no preschool experience. However, the brevity of some of the scales on her test and the lack of any long-term follow-up, especially in view of the "washing out" of early gains in the year following preschool that has been found in some other studies, would tend to have one regard the results of this study with some caution.

Vance (1967) executed a study involving 57 Caucasian, English-speaking three and four year old children who qualified for preschool under California law as recipients of funds under the Aid to Families with Dependent Children (AFDC) program. The group was randomly divided into two experimental groups that attended preschool for seven and one-half months and a control group who remained at home. The only differences between the treatment groups were location and teachers, but the experimental treatment was the same. A daily program to develop both social competency and language skills was developed and employed. Children were tested at the end of the program on six subtests of the ITPA, the PPVT, and an experimenter-devised test named the Vance Language Skills Test (VLST). In addition, teachers rated the children's performance using the Cain-Levine Social Competency Scale. Comparison of scores for the 50 children that remained in the three groups at the end of the program showed no significant differences between the experimental groups and the controls on any of the test instruments.

A definite limiting factor of this study was its use of the economic criterion-AFDC eligibility-alone to determine inclusion of children in the program. While these children were thus poor financially, they were not necessarily disadvantaged in terms of language and cognitive abilities. It may be that, when using Caucasian, English-speaking children, changes in experimental over control children cannot be expected. Furthermore, since testing was done only once, at the conclusion of the program, it is impossible to determine what the long range effects--if any--might have been.

A search for programs employing the task-oriented preschool model shows that only two can be classified under this heading. In both instances, all or part of the day's program introduces features and instructional sequences not usually found in nursery schools. In both, the environment is carefully structured and regulated to lead children to particular learning experiences desired by the experimenters. But beyond these generalizations, the two programs differ radically from each other.

Nimnicht (1966; Nimnicht, Meier & McAfee, 1967) has developed a verbal training approach used with Mexican-American preschool children in Greeley, Colorado. Classroom activities are geared both to self-concept development and the development of cognitive and intellectual skills such as sensory perception and acuity, language development, concept formation, and problem-solving. The classroom is organized as an "autotelic responsive environment", that is, one that presents to the child a variety of activities from which he can freely choose, which are designed and structured in such a way that he will learn particular skills, concepts, or relationships, and which are reinforcing in and of themselves without the use of extrinsic reinforcers. Wherever possible, activities are designed to be self-correcting, enabling the child to see immediately whether he has done them correctly or not, and to correct his performance if necessary. A unique feature of the Nimnicht program, and the main reason for inclusion of the program in this category of the task-oriented, is the use of a special, language-oriented learning area or booth, containing a Language Master, a tape recorder, and an electric typewriter. The use of this typewriter is programmed in a manner similar to O.K. Moore's "talking typewriter", except that a booth assistant rather than a computer provides feedback to the child. The booth assistant's control over the switch that turns on the typewriter and her selective use of this switch shape the behavior of the child in the use of the typewriter from the stage where he is randomly hitting keys to that in which he composes and types his own stories. Each child is asked once daily whether he would like to use the booth, and is given twenty minutes of use if he so desires. If he refuses he is not asked again that day. Each child may ask for additional time later if no one else is using the booth.

Nimnicht's study deals with two groups of three and four year olds who entered nursery school in 1964, and two groups of three and four year olds who entered in 1965. All these children were of Spanish surname and were considered by the experimenters the most disadvantaged children in the area. A second group of children, consisting of middle-class ones whose parents paid tuition and who were exposed to a similar nursery school experience, was included in the experimental study in 1965. In addition, when the disadvantaged children reached kindergarten, a comparison group taken from the same socioeconomic and ethnic group was chosen each year. There is thus no true control group in this study, and while some inferences may be drawn from the results, no cause-effect relationships can be postulated. Data were gathered on both the disadvantaged and the middle class experimental groups, using the PPVT, the Stanford-Binet, and some experimental measures of self-concept. Testing was done at the beginning and end of each school year that the children were in preschool. In addition, all children including the comparison groups picked in kindergarten were tested on the Metropolitan Reading Readiness Test at the end of kindergarten. Kindergarten and first grade teachers also rated the children with respect to their probable success in school in the subsequent year. The results of all these tests are presented in tabular form but without tests of significance (Nimnicht et al., 1967). It is therefore difficult to judge the relative efficacy of the preschool program. All groups of children within the experimental disadvantaged groups made pretest to posttest gains on all the test instruments, with the exception of one group of four year olds whose scores on the PPVT dropped during that period. A similar gain, though beginning from higher baseline scores, is noted for the middle class children, except that in this group also one set of four year olds regressed on PPVT scores. Since there is no control group available for comparison, it is difficult to determine whether the gains reported are due to the nursery school or to maturation of the children. Comparison of the disadvantaged nursery school children with the disadvantaged comparison group during kindergarten showed the former exceeding the latter by eight to ten IQ points on the Stanford-Binet. In view of the way the comparison group was chosen, the significance of this difference can be questioned. On the Metropolitan Reading Readiness Test, experimental disadvantaged children's scores averaged at the 70th percentile, while those of the disadvantaged comparison group averaged at the 35th percentile on national norms. Kindergarten teachers predicted a higher degree of success for experimental than for comparison children; first grade teachers did not. Whether this represents a gradual decline in the effects of the experimental treatment, or whether kindergarten teachers had more knowledge of which child had been in which group previously and predicted accordingly, while first grade teachers may not have had this knowledge, cannot be known.

In overview, this is an interesting approach, with some apparent short-term improvement among experimental children, but the design of the study, the lack of adequate controls, and the paucity of meaningful statistical data make generalization impossible.

Bereiter and Engelmann (1966a, 1966b; Engelmann, 1968a, 1968b) have developed what is probably the most controversial of the preschool programs for disadvantaged children at the Institute for Research on Exceptional Children of the University of Illinois, and have used it with groups of Negro children in Chicago. This preschool focuses very heavily upon meeting academic objectives, and concentrates upon the three areas of language development, reading, and arithmetic. Some of the more usual areas of the preschool curriculum such as self-concept development or free exploration of the environment are either ignored or relegated to relatively unimportant status. The program stresses much back and forth interchange of communication between teacher and student, as well as drill and group vocalization. The basic premise of the program is that since the disadvantaged child is already far behind his more advantaged age peer, his development must be accelerated in those areas critical for school success in order to give him a reasonable chance to compete. While cookie reinforcers and positive and negative verbal reinforcement are used, this is not strictly a behavioral model, because the reinforcers are not used according to a set schedule or at designated times.

The first group reported on is quite small--fifteen students only. They were chosen on the basis of meeting criteria for Head Start, coming from obviously disadvantaged homes, and having one or more older siblings already in a class for the mentally handicapped. No comparison or control group was used, and instead it was decided to use the children's own pre and posttest scores, and their school performance as compared to that of "comparable" children in the same school and of their own older siblings. From an experimental point of view, this is a highly questionable procedure. Tests used included the Stanford-Binet, the ITPA, given both before and at the conclusion of the program, and the Wide-Range Achievement Test at the end only. Group scores on the ITPA show that children who at the beginning of the program were one and one half years below their age in language age had progressed within seven months to scores normal for their ages, while on the Stanford-Binet mean IQ rose from the low 90s to a little over 100. On the Wide-Range Achievement Test, average scores at the conclusion of the program when the children were ready to enter kindergarten were at the first grade level in reading and at the second grade level in arithmetic.

In the second study (Engelmann, 1968a, 1968b) a randomizing technique was used, setting up three groups, one which attended the Bereiter-Engelmann program, one which attended a more conventional preschool, and a final group who attended neither. The second year, both the conventional preschool children and the at home children attended regular kindergarten, and the Bereiter-Engelmann group remained in their program. Stanford-Binet IQ means for the experimental group exceeded those of the 2 other groups combined by 22 points at the conclusion of the program. However, one important factor, the number of adults interacting with the children, was not controlled. In the Bereiter-Engelmann program, the ratio of adults to children was much higher than in either the conventional preschool or the kindergarten. Since this may have had an effect on the children's achievement, quite aside from the curriculum that was used, it would be difficult to ascribe the results to the influence of the program alone.

Because of the lack of controls in the first Bereiter-Engelmann study and the possible intrusion of independent variables such as number of adults in the second study, and because no long-term followup data have yet been reported, it is difficult to judge whether the gains are real or apparent, and whether they will hold through kindergarten and into the elementary grades or fade away.

There is finally the behavioral or reinforcement approach, the newest to make its way into the preschool field, and one in which few studies have been done to date.

These studies have in common the acknowledgement that adherence to the laws of learning can bring about behavior change in children. They thus represent an attempt to systematize and regulate some of the other approaches that have haphazardly included reinforcement principles but have applied them in a nonsystematic fashion. Reinforcement studies involving whole classes of children, rather than only one or two exhibiting obviously maladaptive behavior, seem so far to have been restricted to laboratory schools and other privately sponsored agencies. It is quite possible that the psychological climate within public schools is not yet ready for the use of these methods with whole classes of children.

The single study on which data have been reported to date was done by staff of the Bureau of Child Research at the University of Kansas with a group of fifteen disadvantaged Negro children in a lower-class area of Kansas City, Kansas (Hart and Risley, 1968). Here the purpose of the study was to establish the use of descriptive adjectives during free play situations by reinforcing the use of them in both structured and free play situations. Reinforcement consisted of teacher attention and permitting the use of materials and toys requested by the child. If descriptive adjectives were not used in a request, the child was either ignored or told the teacher was too busy to fulfill his request. Raters were used to record baseline behavior and behavior at three other times during the school term. Results showed that while teaching of the use of descriptive adjectives increased the frequency of their use during the structured classroom activities, it did not affect their use during free play. The use of preschool materials and toys as reinforcers for the production of descriptive adjectives did result in greater frequency of this production even during free play, and this effect continued even after the systematic use of the reinforcers ceased.

While this study was well done from an experimental point of view, including the removal of the contingency part-way through the study to see if behavior would revert to baseline and the calculation of inter-rater reliability, it presents two obvious weaknesses. First, although it can possibly be assumed that similar results would be obtained with other aspects of language and cognitive behavior, only one very small aspect of such behavior was actually studied. It remains to be seen whether a total preschool program based upon reinforcement principles will produce the desired effects. Second, conclusions of the study are based only upon behavior present at the end of the preschool, eighteen days after the removal of the contingencies. In view of the later losses shown in many of the other studies, it would be helpful to know how long performance remained at relatively high levels, or whether and when the same "washing out" as in the non-reinforcement based studies also occurred. Such data are not yet available, and the evaluation of the study is therefore difficult.

Other studies are now in progress at both the University of Illinois (Becker, 1968) and the University of Kansas (Bushell, 1968a, 1968b) attempting to develop total preschool and kindergarten programs for disadvantaged children. The Illinois model is an attempt to alter the Bereiter-Engelmann program to eliminate the punitive features in it that have been the main cause of controversy and to systematize the use of reinforcement in the program. The Kansas model is based upon a token economy, in which appropriate social and task-oriented behaviors are reinforced with chips which can be traded for such things as longer recess, going home early, food and toys. Since these studies are only in a developmental stage and since no data are available, a judgment of their efficacies cannot be made at this time.

An overview of the three types of approaches to preschool education of disadvantaged children discussed in detail here leads to the following generalizations or conclusions:

1. From an experimental design point of view, the methodology of studies needs to be improved. Only four studies, Gray et al. (1966), Bereiter and Engelmann's second study (Engelmann, 1968a), Ametjian (1965) and Vance (1967) used randomization into experimental and control groups.

The rest depended upon comparison groups made up of matched children, children considered comparable upon reaching kindergarten, older siblings of experimental children, or simply contented themselves with speculating upon what the children might have been like without preschool intervention. Furthermore, objectives of many studies (e.g. Gray et al., 1966, Nimnicht et al., 1967, Weikart et al., 1964) were extremely global while criterion tests, generally the PPVT, the WISC or Stanford-Binet, and the ITPA, tended to measure only some aspects of these objectives. It is thus extremely difficult to assess the total efficacies of the program. A clearer statement of objectives and the particular criterion measures used to assess whether the objectives were reached, as in the Vance (1967) and Hart and Risley (1968) studies would have strengthened the other studies. Finally, a number of uncontrolled independent variables that could have affected outcomes are present in many studies and tend to weaken the conclusion that the experimental treatment was the major factor in producing the outcome. Thus for example the number of adults interacting with children varied widely between the experimental and the control groups in the second Bereiter-Engelmann study (Engelmann 1968a, 1968b). In close-knit communities where studies using inactive control or comparison groups were done, there is the definite possibility of leakage of treatment from experimental to control subjects. That is, parents or teachers of control subjects find out about what is being done to the children who are in the preschool or in the special program, and apply some aspects of this treatment to the controls at home or in the non-special programs. This could easily have occurred in the cases of the Gray (Gray et al., 1966), Weikart (Weikart et al., 1964) and Nimnicht (Nimnicht et al., 1967) studies. Gray attempted to account for it by the establishment of the distal control group, which indeed ended up regressing even more on IQ tests than the local control group did. None of the experimenters decided to use an active control group, which could have been exposed to some placebo treatment, leading teachers and parents to believe that something special was being done, and reducing though not eliminating the possibility of leakage.

2. From a statistical point of view, the phenomenon of regression toward the mean cannot be overlooked. Most disadvantaged children have test results that place them at the extreme lower end of the normal distribution of children of the same age on the particular test employed. Thus changes from pre to posttest, or between subsequent test administrations, either in the direction of raising or of lowering scores, could be artifacts of regression toward the mean and not represent any significant change due to treatment at all.

3. Furthermore, many of the tests used with preschool children, such as the WISC, the ITPA and the PPVT, have

been standardized across socioeconomic lines and not specifically on a population with very poor verbal skills such as that of the disadvantaged. They are also primarily intended for somewhat older children. Thus they do not adequately discriminate between children who are both quite young and at the lower level of the scale. They do not have a low enough baseline nor enough items at a lower level to give meaningful discriminations. This inadequacy of length of scales is also true for the experimenter-devised tests used by Ametjian (1965) and Vance (1967).

4. The ultimate and most important criterion for success of a preschool program for disadvantaged children is the subsequent success of these children in school. A number of the studies have recognized this and have provided for followup testing during kindergarten and even later, or for teacher ratings of children's success (Weikart et al., 1964; Gray et al., 1966; Englemann 1968a; Nimnicht et al., 1967). Others have not done so, either because the time restrictions in a doctoral program made it too difficult (Ametjian, 1965; Vance, 1967) or because not enough time has elapsed for such data to be available (Hart & Risley, 1968). But until data following up children in these studies well into elementary school become available, little can be said about the long-term efficacies of any of the programs.

5. Finally, a comparison of the relative efficacies of the three different types of models does not show any

clear trends favoring any particular type. All the studies, with the exception of Vance's (1967), show children in the programs making gains (not always reported in terms of significance level) as compared to comparison or control groups, or as compared to their own baseline behaviors (Hart & Risley, 1968) by the conclusion of the programs. In those programs where subsequent testing is done in kindergarten and/or first grade, the larger or significant differences found at the end of preschool tend to become smaller or nonsignificant by the end of kindergarten or first grade. Bereiter and Engelmann (1966a) do report that their children were doing well 14 months after the conclusion of the program, when they were in first grade, but neither data nor comparison groups are given. So even this conclusion is a bit tenuous.

It would seem that no preschool teaching approach has yet been devised which will bring the language and cognitive skills of disadvantaged children to a level where they can compete with more advantaged children not only in kindergarten but throughout the elementary grades. It may be that no approach is powerful enough to produce the large amounts of change necessary to catch these children up, it may be that the length of the preschool programs--which range from a summer to several years--is not yet long enough to cause a difference, and it may be that preschool programs articulate poorly with presently constituted kindergarten and primary grade instruction, and that these latter must be changed to ensure that the gains made in preschool will remain or be enhanced and will not be washed out.

Implications

Research in bilingualism suggests that bilingual children face both linguistic and socio-cultural problems not faced by monolinguals who partake of the majority culture. Studies of disadvantaged children have shown that these children, regardless of racial or ethnic background, generally come to school with language and cognitive skills lagging far behind those of more advantaged children. Yet there is a paucity of research studies designed to determine the most efficaceous way or ways of teaching bilingual disadvantaged children in a preschool setting.

At the same time, studies by Ausubel and Vygotsky have shown that cognitive growth can be enhanced through the use of cognitive organizers presented rather than attained inductively, and that children's progress through the stages of intellectual growth can be hastened through the use of clearly presented series of concepts. This approach had not yet been attempted in working with preschool children at the time the present research study was formulated.

This study therefore was designed to combine Ausubel's theories of cognitive development, a linguistic approach that had been used with bilingual Head Start children earlier, and the use of either English, or Spanish or both languages as the independent variable, to determine whether this teaching method was superior to the more usual preschool approaches, and whether any of the language modes used was superior to the others.

CHAPTER II

STUDY DESIGN AND PROCEDURES

This study was designed to determine whether a structured verbal learning approach utilizing both cognitive and linguistic training would result in greater language learning gains among Mexican-American Head Starters than would the usual head start program alone. In addition, the study represented an effort to ascertain whether a bilingual, Spanish only, or English only approach would be most successful.

Criterion performance measures used to test for both of these hypotheses were two tests of the Illinois Test of Psycholinguistic Abilities, the Peabody Picture Vocabulary Test, three sub-tests of the Vance Language Skills Test, the Templin-Darley Test of Articulation, and three additional tests developed by the writer, hereafter referred to as the Barclay Test, Additional Speech Sound Items, and the Trager Linguistic Questionnaire.

Background

Summer Head Start programs have been in operation in various parts of the United States since the summer of 1965. Ever since the inception of the programs there has been concern on the part of responsible school officials that the program should be carried out in the best way possible to enhance the learning and social development of disadvantaged preschool children. ~~Accordingly, a number of~~ studies involving curriculum variables have been made in various settings operating head start programs. Since there was a dearth of studies involving Mexican-American children, and since the New Haven Unified School District has a population ideal for this study it was decided to conduct this study in conjunction with the district's summer 1967 Head Start program.

Setting

The New Haven Unified School District is located in Union City, California and the southern part of Hayward in Alameda County, California. Large numbers of Mexican-Americans live in the Union City portion of the school district. The school district has conducted summer Head Start classes under contract with the Office of Economic Opportunity since the inception of the program. In the summer of 1967, six classrooms of approximately 15 children each participated in the Head Start program at the Alvarado School. Two additional classrooms, staffed by teachers hired by the present research project, and utilizing the children enrolled in Head Start, were made available for this project.

2

Hypotheses, Research Design, Independent Variables and Treatments

The specific hypotheses to be tested in this study were that

1. the use of a structured language training program, based upon both psychological and linguistic foundations, for two short periods daily during the seven week Head Start program will result in greater language development as measured by appropriate tests than will the use of music and art activities for commensurate time periods with bilingual and Spanish-speaking Mexican-American Head Start children;
2. a bilingual presentation of the above language training program will result in greater language development in English than either a Spanish or English presentation alone.

The research design entailed the random division of all Mexican-American children available into eight treatment groups and the random assignment of these subjects to one or the other of two experimental teachers. Thus there were two replications of each of three experimental treatments and two replications of the placebo treatment. The four treatments were as follows:

1. structured language training using Spanish as the vehicle for instruction of the English content;
2. structured language training using English as the vehicle for instruction of the English content;
3. structured language training using both Spanish and English in approximately equal proportions as the vehicle for instruction of the English content;
4. a placebo treatment consisting of art and music activities.

Figure 1 illustrates the design of the experiment.

FIGURE 1

TREATMENT GROUPS

Teacher	Treatment 1 Spanish	Treatment 2 English	Treatment 3 Bilingual	Treatment 4 Placebo
Teacher 1	Group 1	Group 2	Group 3	Group 4
Teacher 2	Group 5	Group 6	Group 7	Group 8

In the comparisons involved with Hypothesis 1 (comparing the three experimental treatments with the placebo treatment), the experimental and placebo groups differed in the following ways:

1. Structure. A highly planned and structured program with lessons planned far in advance and coordinated to overall aims, and with materials prepared ahead of time was used with the six treatment groups in the three experimental treatments. A relatively unstructured approach, planned on a day to day basis and emphasizing free play and self-directed art and musical activities, was used with the two control groups in the placebo treatment.

2. Language. In treatments 1 and 3 (used with groups 1, 3, 5, and 7) Spanish was used as the language of instruction (groups 1 and 5) or one of the two languages of instruction (groups 3 and 7). In treatment 2 (used with groups 2 and 6) and in the placebo treatment (used with groups 4 and 8) only English was used.

3. Use of cognitive organizers. In the three experimental treatments, cognitive advance organizers and summations were used to introduce and end lessons. These were not used in the placebo treatment.

4. Linguistic training. Specific linguistic training methods (e.g. the teaching of sentence patterns and sounds) were used in the three experimental treatments; none were used in the placebo treatment with the controls.

5. Training in the use and understanding of concepts. The six experimental groups in the three experimental treatments received training in the use and understanding of particular concepts, such as classification by color and size, spatial relationships such as up-down, on-off, qualitative relationships such as rough-smooth, and comparative relationships such as big-bigger-biggest, while no such training was given to the two placebo groups.

In the comparisons of the three treatments involved with Hypothesis 2,: 1) Spanish, 2) English, and 3) Bilingual, the treatments were variations on a single independent variable, i.e., the language of instruction. In all other respects, such as content and method, these three treatments were the same.

Selection and Composition of the Experimental Sample

The original intent in this study had been to work only with Mexican-American children. Therefore, it was hoped to find out who they were and to use only this group in the selection of the treatment groups. However, this proved impossible in practice. The local office of the Office of Economic Opportunity was handling the Head Start enrollment for the first time. In previous years, enrollment, as well as teaching, had been handled by the school district. As a result of this change, data as to the national origin of and language spoken by each child was unavailable. It was therefore decided to use the total group of Head Start children in the process of random assignment to treatment groups and in the application of the treatments, and to identify those children who were native speakers of English during the course of the program.

Further, because enrollment in Head Start typically fluctuates as some children drop out and others are added in their places, and since a later addition of children to existing groups would possibly contaminate the experimental design, it was decided to base the randomization of groups on the total pool of subjects available at the end of the first day of the Head Start classes. In accordance with this rationale some 95 students were available at the end of the first day's session. Accordingly, seven groups of 12 students each and one group of 11 students were randomly drawn from the total sample and assigned to the eight treatment procedures. During the first week, eleven of the students dropped from the program, and two refused to cooperate and had to be dropped from the study. This left a total experimental population of 82 students. Later enrollees were permitted into the regular Head Start program but not into the experimental study.

During the course of the program, it was determined by the special project teachers and the regular Head Start teachers that 15 of the children remaining in the study were native English speakers. Since original assignment of children to experimental groups had been random, the English speakers were also randomly, rather than equally, divided among experimental groups. These children remained in the experimental groups during the course of the summer, and participated in the testing program. Data to be reported later, however, are for Mexican-American children who were not native English speakers only. A total of 67 Mexican-American children remained in the study throughout the summer and were posttested. During the year, ten of these children moved from the area and were unable to participate in the followup testing program. Followup test data are thus available for only 57 students, and all statistical analyses for the followup testing as well as posttest and followup test comparisons are based on these 57 cases.

Selection and Implementation of Treatments

Three treatment strategies or curricular variations and one control treatment were applied by each of two teachers: the use of Spanish as the language of instruction, the use of English as the language of instruction, the use of both languages, and a placebo treatment consisting of art, musical activities and free play. Each treatment group met with its teacher for a 35 minute period once a day, four days a week for the seven-week duration of the Head Start program, beginning with the second day. There were, however, some unavoidable interruptions in the program of instruction. For example, the whole group went on field trips one day each week. In addition, there was the one day holiday on July 4th. In all, the experimental treatment groups met 26 times.

In order to eliminate the possible effect of meeting at a particular time of the school day, each treatment group met at a different time on each of the four days of the week. Thus the Spanish only groups met during the first 35 minute time block on Monday, during the fourth on Tuesday, the third on Thursday and the second on Friday. A comparable time schedule was maintained for the other three groups.

Each 35 minute session was divided into two instructional periods of approximately 15 minutes length each, with a 5 minute break or recess in between the two. During the break the children played outdoors or indoors depending on the weather. A break was used because it was felt that children this young would not be able to concentrate for the full 35 minutes.

When the children in the experimental groups were not with their experimental teacher they were participating in the regular activities of the Head Start class. Since the experimental groups were randomly drawn from the total population, only a few children were removed from any regular Head Start class at any given time.

The final cell sizes, showing Mexican-American students only, for the treatment and posttests and for the followup tests are shown on page 47 in Figures 2 and 3.

FIGURE 2

Cell Sizes, Mexican-American Students, for Treatment and Posttests (n=67) except Templin-Darley

	Spanish	English	Bilingual	Control
Teacher 1	9	9	11	8
Teacher 2	6	8	7	9

FIGURE 3

Cell Sizes, Mexican-American Students, for Followup Tests (n=57) except Templin-Darley

	Spanish	English	Bilingual	Control
Teacher 1	5	9	10	7
Teacher 2	6	6	6	8

Teachers, Classrooms and Ancillary Personnel

Two teachers were employed specifically by the research project both to help with the development of the curriculum and to teach. Each had three experimental groups plus the control group. Both teachers were fluent in Spanish as well as English. One was a beginning teacher whose only previous experience in teaching was student-teaching a sixth grade class in the same school district. She was 23 years old, had studied Spanish in college, and was married to a Chilean student at the University of California. Spanish was spoken in her home, and she was fluent in the language. This was Teacher 1. Teacher 2 was 34 years old, married to a high school social studies teacher in the district. She had previously taught kindergarten in the district for several years and had done some work in parent education with parents of preschoolers. She had spent a year at the University of Mexico, studying Mexican language and culture, and spoke Spanish very well.

These two teachers were hired for the project in part because the pool of available teachers who knew Spanish was very small, and in part to see whether the difference in amount and level of experience would produce measurable differences in learning among their groups, discernible on test results.

Two regular elementary classrooms at the Alvarado School were used for the research project. They were located directly across an open play area from the six classrooms used by the Head Start Porgram. The movement of children from one area to another for their special class sessions was thus facilitated and did not create any undue disturbance to the ongoing classes. The two classrooms were outfitted with the usual elementary school furniture. In addition, kindergarten equipment, including blocks, trucks and rhythm instruments, was brought in from one of the kindergarten rooms not in use during the summer. This equipment was used primarily by the control groups, but was also utilized by other groups during the break between lessons.

Two Neighborhood Youth Corps workers were donated to the research project by the school district. These two high school students assisted the teachers in gathering up each group of children from the existing six Head Start classes and returning them to their respective classes at the end of each session. In addition, these aides helped with such matters as the tying of shoes, the taking of youngsters to the bathroom, the procuring and storing of supplies, and general cleanup activities. They did not participate in the instructional program itself. While they were aware in general terms that this was an experimental study, they were not informed specifically of the different treatments. In addition, the graduate assistant employed by the project worked with the teachers and project director in curriculum development and test construction. He also supervised some of the testing.

Curriculum

The curriculum used with the three experimental groups differed from group to group only in terms of the language of instruction (Spanish, English, or both). It was based upon Ausubel's theory of the use of cognitive organizers and the teaching of concepts both as an organized introduction to the sequence to follow and as a summation of the sequence at its conclusion. It also incorporated linguistic training methods such as the use of particular sentence patterns, sounds, and verb constructions peculiar to the English language found to be helpful in teaching English as a foreign language to older students.

Accordingly, one of the first tasks after the review of the literature was to establish a list of criterion objectives to be met by the children as a focus of curriculum development and as an expected consequence of the application of the experimental curriculum. These objectives were the same for all three experimental treatment groups. The objectives of the project were grouped into two categories: 1) conceptual, and 2) linguistic. The linguistic objectives were checked for feasibility for inclusion into the instructional program and for relevance as objectives with Dr. Edith Trager of San Jose State College who served as the linguistic consultant to the project. Dr. Trager in a workbook for teaching English to older children (Trager, undated) developed a series of sentence patterns for training purposes. These sentence patterns were utilized in the curriculum of this project. They are as follows:[1]

1. Lions roar. N Vi
2. Lions look strong. N Vl Adj

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[1] Not all of these patterns were most relevant to the purposes of this study; therefore patterns 3, 6, and 7 were not used. The seven others were chosen as most important and intensive drill in these was done with the experimental groups.

The key to the above symbols is as follows:

N = noun
Nobj = noun object
Vi = verb intransitive
Vl = verb linking
Vt = verb transitive
Adj = adjective
Be = verb of being

3. Lions become killers.	N VI N
4. Lions kill people.	N Vt N
5. Lions give people nightmares.	N Vt N Nobj
6. Lions consider impalas good.	N Vt Nobj Adj
7. Lions consider impalas food.	N Vt Nobj N
8. Lions are there.	N Be Adv
9. Lions are strong.	N Be Adj
10. Lions are killers.	N Be N

The following figures 4 and 5 outline in summary fashion the objectives, criteria, and testing devices used in the planning and execution of this study.

FIGURE 4

OBJECTIVES, CRITERIA, AND TESTING MEASURES FOR THE LINGUISTIC ASPECTS OF THE STUDY

	Objectives	Criteria	Testing Measures
1.	Increased identification of English vocabulary	Recognition and use of English vocabulary	PPVT
2.	Control of principal inflection endings	Demonstration of skill, increase in rate of usage	Templin-Darley, Barclay, ITPA Auditory-Vocal Automatic Test
3.	Correct usage of forms of the verb to be	Demonstration of skill, increase in rate of usage	Barclay
4.	Correct usage of the - ing form of the verb	Demonstration of skill, increase in rate of usage	ITPA Auditory-Vocal Automatic Test, Barclay
5.	Correct usage of simple past of irregular verbs	Demonstration of skill, increase in rate of usage	ITPA Auditory-Vocal Automatic Test, Barclay
6.	Correct usage of simple past of regular verbs	Demonstration of skill, increase in rate of usage	ITPA Auditory-Vocal Automatic Test, Barclay
7.	Correct usage of the -s form of verbs	Demonstration of skill, increase in rate of usage	ITPA Auditory-Vocal Automatic Test, Barclay
8.	Correct usage of irregular plurals	Demonstration of skill, increase in rate of usage	ITPA Auditory-Vocal Automatic Test, Barclay
9.	Correct usage of word order in sentence patterns as above enumerated including negative and interrogative transformations	Demonstration of skill, increase in rate of usage	Observational only, not directly testable

10. Correct pronunciation of regular English sounds including recognition of correct pronunciation	Demonstration of skill	Templin-Darley, VLST Speech Sound Discrimination Subtest, Additional Speech Sound Items, ITPA Auditory-Vocal Automatic Test

FIGURE 5

OBJECTIVES, CRITERIA, AND TESTING MEASURES FOR THE CONCEPTUAL ASPECTS OF THE STUDY

	Objectives	Criteria	Testing Measures
1.	Naming of people, objects, and representations of people	Demonstrated skill, increase in rate of usage	PPVT, ITPA Auditory-Vocal Automatic Test
2.	Classification of people and objects	Demonstrated skill, increase in rate of usage	ITPA Auditory-Vocal Association Test
3.	Correct usage of prepositional relationships	Demonstrated skill, increase in rate of usage	VLST Spatial Relations A and B Sub-tests
4.	Correct usage of comparative relationships	Demonstrated skill, increase in rate of usage	Barclay, ITPA Auditory-Vocal Automatic Test
5.	Correct usage of qualitative and descriptive relationships	Demonstrated skill, increase in rate of usage	ITPA Auditory-Vocal Association Test, Barclay
6.	Correct usage of temporal relationships	Demonstrated skill, increase in rate of usage	ITPA Auditory-Vocal Association Test, Barclay

After the establishment of objectives, criteria of assessment and testing devices, the curriculum in its conceptual and linguistic phases was subdivided into seven weekly segments to correspond to the seven weeks of the summer school. The weekly objectives are shown in Figures 6 and 7 with the overall objectives reported in Figure 6 and the developmental sequence in Figure 7.

FIGURE 6

OVERALL CURRICULUM OBJECTIVES

I. Linguistic Objectives

1. Increased identification of English vocabulary.
2. Control of principal inflectional endings: regular noun plurals as in cats, dogs, horses, and possessives as in cat's, dog's, horses's (s/z/iz).
3. Correct usage of the forms of the verb to be: am, are, is, was, were.
4. Correct usage of the -ing form of the verb (progressive): "I'm jumping."
5. Correct usage of the simple past of regular verbs in -ed and correct inflectional endings: "I jumped," "I added it," (t/d/id).
6. Correct usage of the simple past of irregular verbs such as do, say, have, put, get, sing, run.
7. Correct usage of the -s form of verbs: "He runs."
8. Correct usage of irregular plurals such as those of man, woman, child, foot, tooth.
9. Correct usage of the word order in sentence patterns including negative and interrogative transformations.
10. Correct pronunciation of particular English sounds, including recognition of correct pronunciation.

II. Conceptual Objectives

1. Naming of people, objects and the representations of people and objects.
2. Classification of people and objects (by color, size, quantity, sex and qualitative opposites).
3. Correct usage of prepositional relationships: up-down, on-off, in-out (of), under-over, between, through, in the middle of, behind, in front of.
4. Correct usage of comparative relationships: big, bigger, biggest, and of numerical relationships: more than, less than, most, least.
5. Correct usage of qualitative and descriptive relationships: big-little, rough-smooth, hot-cold, light-heavy, happy-sad, pretty-ugly.
6. Correct usage of temporal relationships: past, present, and future.

FIGURE 7

CURRICULUM OBJECTIVES ON A WEEKLY BASIS

Week 1

A. Linguistic

1. Learning names of people and objects in the classroom.
2. Using pattern 10 sentences (N Be N) and their negative and interrogative transformations.
3. Using pattern 1 sentences (N Vi).
4. Using sounds: f,v,p.
5. Using prepositional relationships: up, down, over, under.

B. Conceptual

1. Learning that all people and objects have names.
2. Learning that these same names are applied to representations (i.e. pictures, mirror images) of people and objects.
3. Beginning of classification (boys-girls).

Week 2

A. Linguistic

1. Review of patterns 1 and 10. Continued stress on transformations.
2. Review of prepositional relationships: up, down, over, under; learning new prepositional relationships: in, out.
3. Learning pattern 9 sentences (N Be Adj).
4. Using sounds: review of f,v,p; learning of b,v,k.
5. Using sounds -s form of verbs (third person singular).
6. Learning color names.

B. Conceptual

1. Learning descriptive relationships--opposites and negatives e.g. big, little; tall, not tall.
2. Classifying by color.

Week 3

A. Linguistic

1. Learning pattern 4 sentences (N Vt N), using body parts.
2. Learning pattern 5 sentences (N Vt Nobj).
3. Using sounds: r,s,ch,sh; review p.
4. Beginning comparisons, e.g. big, bigger, biggest.
5. Learning prepositional relationships: on, off.

B. Cognitive

1. Using qualitative relationships, e.g. rough, smooth.
2. Using comparative relationships: big, bigger, biggest.

FIGURE 7 (CONTINUED)

Week 4

A. Linguistic

1. Review of pattern 4 and 5 sentences, commands.
2. Learning prepositional relationships: between, in the middle of.
3. Counting to 5.
4. Using plurals
5. Using sounds: s, z in plural endings.
6. Using -ing form of verbs, e.g. walking, talking.

B. Conceptual

1. Classifying by number, e.g. 1, more than 1, 2, more than, most.
2. Using plural concepts.

Week 5

A. Linguistic

1. Learning irregular plurals.
2. Using simple past tense -ed.
3. Using sounds: various pronunciations of -ed ending--t,d,id; using g,h.

B. Conceptual

1. Using temporal relationships - past and present.

Week 6

A. Linguistic

1. Using Pattern 2 sentences (N Vl Adj).
2. Using Pattern 8 sentences (N Be Adj).
3. Using sounds: j,w.
4. Irregular past of common verbs.

B. Conceptual

1. Review of temporal relationships.
2. Using descriptive relationships--feelings.

Week 7

A. Linguistic

1. Review patterns 2 and 8.
2. Using sounds: tw, st, th.
3. Review.

B. Conceptual

1. Using quantity or number.
2. Review of classification by number, size, etc.
3. Using qualitative relationships--alike vs. different.

Utilizing the weekly objectives as guidelines, the two teachers on the project, the school psychology graduate student, and the writer together wrote a day by day curriculum. The major portion of this curriculum was written during the two weeks prior to the beginning of the summer Head Start program, and the rest during the one day of the week that the children were on field trips and no sessions were held. In addition, each day's curriculum was reviewed and critiqued at the end of each day, and suitable corrections and additions were made on the basis of additions or deletions implemented during the actual teaching sequences. Each day the curriculum for the next day was also reviewed and discussed at length, so that both teachers would be fully familiar with what was to be done the next day, and so that necessary equipment and instructional aids could be prepared and made available. In addition, the activities for the two control groups were also discussed and decided upon at these daily meetings.

Once the curriculum had been written in English, the portions of it that were to be used in Spanish by the Spanish and bilingual treatment groups were then translated into Spanish by the school psychology graduate student who was a native Spanish speaker. His translation was then checked for accuracy and idiomatic suitability by the other three members of the research project staff, all of whom were also fluent in Spanish. It was then typed up and distributed to the two teachers for classroom use by them.

It should be noted that this curriculum is not a word-by-word running narrative for the teacher. It is rather an outline or series of lesson plans. It sets the opening statements and closing summations, and provides a general outline of statements and lessons to be used. The teachers expanded upon this outline within the actual classroom situation as they saw fit. The only limitations imposed upon them in this were that the language mode to be used with a particular treatment group had to be maintained, and that the objectives to be covered that day had to be included in teaching.

The content, or the particular language and conceptual objectives taught, was the same for all six experimental groups. That is, if a particular irregular English verb was taught to the Spanish group, that same verb was also taught to the English and bilingual groups. However, the language used to introduce and explain these conceptual and language skills and concepts differed across treatments. In addition, the informal language used by the teachers with children as they entered the classroom and sat down, during the break, and again when they left, was the language of instruction appropriate to that treatment group. Thus this was exclusively Spanish for the Spanish groups, exclusively English with the English groups, and a mixture of both with the bilingual groups.

Verbal interaction between teacher and students was purposely kept to a minimum in the control groups. Activities performed by these groups were purposely chosen to minimize language training and yet to conform to some of the activities generally performed in Head Start classes. The purpose of this was to control for Hawthorne effect by having an active control group who also went to special sessions with special teachers for daily 35-minute periods rather than an inactive control group who merely remained in the ordinary Head Start classes. At the same time, verbal training during this period was minimized. Activities performed by the control groups included marching to records, marching as a rhythm band, fingerpainting, potato painting, building of newspaper kites, and supervised play on playground equipment.

Each teacher had a four-page lesson outline or plan for each day that had been jointly developed. Each included a page setting out the Spanish only instructions, a page setting up the English only instructions, another for bilingual, and finally the "lesson" page, on which was the actual instructional content for all three treatment modes. This last page remained the same for all three treatment groups. In use, the appropriate language page was opposite the lesson page in the teacher's outline for each treatment. Since the curriculum had been jointly developed and since both teachers worked from identical outlines, the two programs were as closely alike as possible, allowing only for the individual differences between the two teachers. No definite curriculum was written for the control groups. However, the teachers coordinated their activities with these groups so that they performed the same activities either on the same day or on alternate days.

A number of curricular aids were purchased or developed during the program. Of great use were the cards from the Lancaster program (Lancaster, 1966) which are a series of line drawings of popular objects, and of people doing usual activities such as running, walking, washing, playing. Also used was a previous head start curriculum developed for Mexican-American children by Lily Chinn Flood (1966). Some of her ideas such as the use of puppets and balloons and funny rhymes to teach English sounds difficult for Spanish speakers were incorporated into the present curriculum. In addition, Mrs. Flood generously gave of her time to observe our classes in operation and to make suggestions. While basically both her method and the one described here were designed to increase the language learning of non-native English speaking Head Start children, her method did not use any conceptual objectives nor did it stress concept formation through the use of cognitive organizers. In addition, only English was used in her curriculum throughout.

The teachers employed by the project thought up a number of ingenious instructional aids. Individual flannel boards were constructed for the children using ordinary flannel fabric stapled to a backing of heavy cardboard. Each child was thus able to put circles of varying sizes and colors on his own board in particular desired combinations of number, color, or size. This proved to be an effective teaching aid. Small hand mirrors were purchased at a local dime store for individual children to use during pronunciation lessons and drills. These aids enabled each child to see whether his lips, teeth, and tongue were in the appropriate positions for making particular sounds as demonstrated by the teacher. Large packing boxes that had been used to crate furniture and appliances were also found useful as teaching aids, especially in demonstrating spatial relationships using the boxes and children. It became easier for the children to understand concepts such as in, under and behind, when they could actually see that Maria was in, or under, or behind the box.

Test Selection and Development

Once objectives and criteria had been established, the writer began to search the literature of available and appropriate tests to determine which could be used to measure the specific skills desired. A number of standardized tests which were available met particular curriculum objectives well enough that they were included in the test battery. These included the Peabody Picture Vocabulary Test (PPVT), two sub-tests of the Illinois Test of Psychlinguistic Abilities (ITPA), Auditory-Vocal Automatic and Auditory-Vocal Association, three sub-tests of the Vance Language Skills Test (VLST), Spatial Relations A, Spatial Relations B, and Speech Sound Discrimination, and the Templin-Darley Test of Articulation. In addition, where tests could not be found to meet objectives, the writer, with the advice and assistance of Dr. Edith Trager, developed such tests. Three such tests were developed. One of these tests consisted of a set of items similar to those on the ITPA Auditory-Vocal Automatic sub-test, but included items not touched upon by the ITPA. This was simply labeled the Barclay Test and consisted of 27 items (see Appendix B). Appropriate cards from the Lancaster (1966) series were used as stimulus items in a sentence-completion format. Eight items dealt with comparison of adjectives. Nine were opposites. The final 10 items were uses of the present progressive and past tenses of regular and irregular verbs. As originally developed, the test also included 11 additional items involving counting. These had to be eliminated because testers gave conflicting directions to various children and did not administer the items uniformly. As a result, the items were not counted in scoring. They were left in the followup tests but not scored to make the administration of both sets of tests uniform. The test reproduced in the appendix is the final scored version, without the counting items.

Further, it was found that the sounds used in the Vance Speech Sound Discrimination sub-test did not include a number that were being stressed during the instructional program and that were sounds Mexican-American children often had trouble with. Accordingly, 19 additional items based upon minimal pairs of words (Trager & Henderson, 1956) were developed. A local artist supplied line drawings of each pair of items. The test was administered immediately after the 59 items of the corresponding Vance sub-test, and was administered and scored in the same manner. This test was simply named Additional Speech Sound Items.

Finally, no existing test seemed adequate to test for command of the use of the past tenses. Therefore the Trager Linguistic Questionnaire, a series of five commands, was developed. In each case a child was told to perform an action and then asked, "What did you just do?" Answers were recorded and scored on the basis of whether children showed correct usage of a past tense (simple past, past progressive, or perfect) or not.

Because the time for the development of test items and of the total instructional program was so short, and since a comparable group of students to use as a sample in testing the reliability of these two tests could not be obtained within these time constraints, it was decided to base reliability studies upon the posttest administration of these tests. The Spearman-Brown formula corrected split-half method (Ferguson, 1959, p. 280) was employed on both tests. This yielded a .91 reliability coefficient for the Barclay Test and a .76 coefficient of reliability for the Additional Speech Sound Items. It should be mentioned that the original Speech Sound Discrimination sub-test, while much longer (it consisted of 59 items whereas the Additional Speech Sound Items Test had only 19 items) had a reliability coefficient of .83 (Vance, 1967).

Test Administration

Testing was done on three separate occasions: at the beginning of the summer Head Start program, at its end, and the following Spring. Pretesting at the beginning was accomplished in the first three days of the summer program by school psychology graduate students from California State College at Hayward. Pretesting was done at the suggestion of Dr. Arthur P. Coladarci of Stanford University, who felt that the range of abilities among the children might be so great that the posttest and followup test instruments might not have enough ceiling.[2] Because no rooms other than those in which the experimental treatments were being conducted were available for testing, and because therefore only a very limited number of examiners could work at once, only a very short test could be used, or pretesting would have continued on for too long to give baseline data on some of the children. Accordingly only the PPVT, Form B was used in pretesting. The testers were aware of the fact that a study of some kind was in progress, but they did not know what it entailed and were not aware that the children were divided into particular experimental groups.

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[2] Personal communication, June 12, 1967.

Posttesting was done on the four days that the children were present in class during the last or seventh week of the program. Graduate students from the school psychology program at California State College at Hayward and from the guidance program at San Francisco State College, as well as one credentialed school psychologist, did the testing. Form A of the PPVT, the Auditory-Vocal Association and Auditory-Vocal Automatic sub-tests of the ITPA, the Barclay Test, Spatial Relations A, Spatial Relations B, and Speech Sound Discrimination sub-tests of the VLST, Additional Speech Sound Items and the Trager Linguistic Questionnaire were all administered by the psychologists and counselors. In addition, a credentialed speech therapist administered the Templin-Darley Test of Articulation. Again, all these testers were unaware of the nature of the experimental study and had no knowledge of which group each child was from.

Followup testing was done in April, 1968, approximately seven and one-half months after the posttesting. The exact same battery of tests given during posttesting was repeated at this time. Because of the length of time between test administrations, it was felt that learning from one administration would be negligible by the second administration. Graduate students in school psychology at California State College at Hayward did all of the followup testing except for the Templin-Darley, which again was administered by a credentialed speech therapist.

Because some of the students had moved from the New Haven Unified School District into surrounding areas, some testing was done by one of the graduate students in schools in other school districts. Letters requesting permission to test were sent to school principals in the schools involved. The speech therapist was unable to do this additional work, so that Templin-Darley scores are available only for those children still in the New Haven District. In addition, 11 of the original sample of 82, including ten of the 67 Mexican-American children, had moved from the area and were unavailable for any testing. Followup test results are thus available for 57 children on all tests except the Templin-Darley; for the latter results are available for 53 children. The breakdown of the group into experimental cells has been previously shown (see Figure 3).

All tests were scored by the graduate assistant and by the writer spearately, and results compared afterwards. There were no discrepancies in scoring between the two other than four instances where one or the other had made an error of addition, which was corrected. While from an experimental design viewpoint this was not the most desirable system, inasmuch as both scorers had originally assigned children to treatment groups, it was the only system possible, since these two were the only people available familiar enough with the tests to score them accurately.

Summary

This chapter reports the background, design and curriculum evolution of the study. Within the framework of an existing Head Start program in a predominantly Mexican-American community, a structured verbal learning approach utilizing both cognitive and linguistic training procedures was planned and executed. Curriculum objectives, criteria, and testing instruments were developed to ascertain the effect on children in preparing them for more adequate cognitive growth and development. The selection of the experimental and control groups by randomization procedures has been detailed. The curriculum planning and implementation through various language media and the testing procedures have been outlined.

CHAPTER III

RESEARCH FINDINGS

The specific hypotheses to be tested in this study were:

1. The use of a structured language training program, based upon both psychological and linguistic foundations, for two short periods daily during the seven week Head Start program will result in greater language development as measured by appropriate tests than will the use of music and art activities for commensurate time periods with bilingual and Spanish-speaking Mexican-American Head Start children.
2. A bilingual presentation of the above language training program will result in greater language development in English than either a Spanish or English presentation alone.

Three treatments, using Spanish as the language of instruction, using English as the language of instruction, and using both languages in instruction, were employed within a highly structured verbal training program, In addition, a placebo treatment consisting of musical and art activities was used with controls. In all there were two replications of each of four treatment conditions administered by the two teachers in the project. Children were randomly assigned to treatment groups from an existing pool of subjects in a summer Head Start program.

Testing occurred at three different times during the study: 1) during the first three days of the summer program in June of 1967 when the Peabody Picture Vocabulary Test (PPVT) Form B was administered to all children, 2) during the last week of the program in August of 1967 when the entire battery of tests was given, and 3) in April, 1968 when the entire battery was again administered to the children. Hereafter these three separate testings will be referred to as the pretesting, posttesting, and followup testing sessions.

Data analysis was done using the IBM 360-67 computer at Stanford University during August and October 1968. Data were analyzed in five stages. First, all demographic variables, pretest scores, posttest scores, and followup test scores for the 57 students on whom all such data were available (53 only in the case of the Templin-Darley Test of Articulation) were correlated with each other.

Secondly, since the Peabody pretest correlated highly with most of the posttest and followup test variables, plots were made between it and these variables to check for homogeneity of regression. In addition, upon the advice of Dr. Janet Elashoff of Stanford University, a few sample analyses of variance and of covariance (using the Peabody pretest scores as the covariate) were run for some of the posttest variables. Since the homogeneity of regression was judged adequate on most variables, and since a comparison of the trial analyses of variance and covariance showed that most of the variance observable was related to Peabody pretest scores, Dr. Elashoff recommended the use of analysis of covariance as the appropriate statistical procedure.

The third procedure involved the use of analysis of covariance to determine whether the first research hypothesis could be accepted. Accordingly, all six experimental groups combined were compared to the two placebo control groups combined through a 1 x 2 analysis of covariance design. While a 2 x 2 analysis, showing teacher as well as treatment effects, would have been desirable, it was impossible to execute meaningfully because of the great disparity in size between treatment groups. Thus simple one-way analyses were chosen as the appropriate statistical procedures. These were done for all posttest and followup test variables.

Fourthly, to determine whether the second research hypothesis could be accepted, 2 x 2 analyses of covariance, using the two teachers and two treatments, and with the Peabody pretest as covariate, were made. First, the Spanish and Bilingual treatments were compared with each other, and then the English and Bilingual. These analyses were done for all posttest and followup test variables.

Finally, 2 x 4 analyses of covariance, comparing all four treatments and the replications by both teachers, were done for all posttest and followup test variables. The primary purpose of these analyses was to determine if there were any overall teacher effects, since it had been impossible to test for them in the earlier 1 x 2 analyses that had included all four treatment modes.

Each of these procedures and their respective outcomes will be discussed below. First, scores on the Peabody pretest and relevant aspects of the correlation matrix will be dealt with. Then data pertaining to Hypothesis 1 will be discussed. Next, data pertaining to Hypothesis 2 will be discussed. Finally, data derived from the final 2 x 4 analyses and their relationship to those discussed earlier will be described.

Pretesting and Correlation

Table 1 presents the mean scores for all treatment groups and combinations of groups on the Peabody pretest.

TABLE 1

PEABODY PICTURE VOCABULARY TEST, FORM B, PRETEST
MEAN SCORES FOR TREATMENT GROUPS AND COMBINATIONS OF GROUPS
N=67

	Spanish	English	Bilingual	Placebo Control	Total
Teacher 1	18.33	17.00	24.18	25.38	21.27
Teacher 2	24.83	16.75	37.71	34.89	28.70
Both	20.93	16.88	29.44	30.41	24.60

It can be observed quite readily that in spite of the random assignment of individuals to treatment groups, great differences existed between these groups on pretest scores. Thus it can be assumed that more individuals in some groups than in others possessed the ability measured by the PPVT pretest, that is recognition of the English name of familiar objects whose pictures are presented. Furthermore, inspection of the correlation matrix (Table 2, to be discussed in detail below) showed a high degree of correlation between the PPVT pretest and various posttest and followup test variables, leading to the assumptions that 1) the various measures of language ability measured the same or closely connected language skills, and 2) differences between groups on posttest and followup test scores could have been due to this initial difference in language ability rather than to the different treatments or teachers. This seemed to offer additional rationale for the use of analysis of covariance, using PPVT pretest scores as the covariate.

Table 2 presents the correlations between demographic variables (i.e., age, sex, treatments, teachers), pretest, posttest and followup test scores. In all, seven demographic variables and 21 test variables were correlated with each other. The correlation matrix showed that age, sex, and the teacher to whom the child was assigned correlated with only a few test variables with any degree of significance, that some treatments correlated significantly with some pretest, posttest, and followup test scores, and that a very high positive correlation existed between almost all test scores, on the pretest, posttest and followup test.

Specifically, boys scored significantly higher than girls on only one test, the followup test administration of the PPVT ($p < .05$). No other significant correlation with sex of the child was found, leading to the conclusion that, with the exception of this one test variable out of 21, sex was not a significant factor in test performance.

The teacher variable correlated negatively ($p < .01$) with the posttest administrations of the Illinois Test of Psycholinguistic Abilities (ITPA) Auditory-Vocal Association Test and of the Additional Speech Sound Items. This indicated that in these two instances, Teacher 1's students did significantly better than those of Teacher 2. On all other test variables, that is on 19 of the 21, the teacher factor did not correlate significantly with test scores.

The child's age, based upon his age in months at the time of pretesting, correlated significantly with only one test variable. Specifically, age correlated ($p < .01$) with the PPVT posttest, showing that older children did better than younger ones. On the 20 other test variables, no significant relationship between age and test performance was indicated.

In summary, it would seem that neither age nor sex of the child, nor the teacher in whose room he was placed for the experimental treatment, was related in any great degree to how the child performed on the various tests on their several administrations. This would lend justification to the random assignment of children to treatment groups and teachers regardless of sex or age, as was done in this study. It also seems to indicate that, on the basis of the correlational data, there was little difference between the two teachers in terms of the performance of their students on the criterion tests.

Some interesting trends became apparent in correlating the four experimental treatments with other variables. The Spanish treatment correlated significantly with no test variables at all.

By contrast, the English treatment correlated negatively ($p < .01$) with the PPVT pretest, indicating that students in this particular treatment began the study lower than those in other treatments on abilities measured by the PPVT. This was confirmed by the table of pretest mean scores (Table 1). The English treatment also correlated negatively with 3 out of 10 posttest variables and with 5 of 10 follow-up test variables. On the basis of the correlational data alone, it was impossible to decide to what extent the English treatment itself was related to lower scores on subsequent test administrations, and to what extent initial lower ability in the use of English, as demonstrated by the pretest scores, influenced later test results.

The Bilingual treatment, like the Spanish, correlated significantly with none of the test variables.

Finally, the Control treatment correlated positively ($p < .05$) with the PPVT pretest, showing that this group had a fairly good command of English even before the beginning of the program, and with the ITPA Auditory-Vocal Automatic Test followup test.

In summary, it would appear that in spite of the randomization procedure employed in assigning children to treatment groups, those children assigned to the English treatment did more poorly on the pretest and on many of the posttest and followup test variables than did the children in other treatment groups, while Control children began by doing better on the pretest than other groups did.

Almost all of the correlations of the various test variables with each other were significantly high and positive. The single exception to this trend seemed to be the Templin-Darley posttest, which correlated significantly with only five of the other 20 test variables including its own followup administration. The PPVT pretest correlated significantly with all posttest and followup test variables except the Templin-Darley posttest. All the tests in the posttest and followup test batteries, except for the Templin-Darley posttest, also were highly related to each other. Thus it seems that all the tests employed in the study, with the possible exception of the Templin-Darley, either measured the same or closely related aspects of general English language ability, or that all depended upon some common factor of language ability for successful performance.

Analyses of Covariance Related to Hypothesis 1

To determine whether Hypothesis 1, i.e., that the structured language instruction treatment would result in greater language development than the placebo control treatment, could be accepted or rejected, all six treatment groups combined were compared to the two control groups combined on all ten posttest and all ten followup test variables. A 1 x 2 analysis of covariance comparing combined groups 1,2,3,5,6 and 7, with combined groups 4 and 8 and using the PPVT pretest scores as the covariate was employed for each of the 20 test variables. The results of these analyses are shown in Tables 3-12 for the posttests and Tables 13-22 for the followup tests.

A study of the results of these one-way analyses of covariance showed that there were no significant treatment effects on any of the posttest or followup test variables. On the basis of these results, Hypothesis 1 must be rejected and the null hypothesis sustained. The structured language training approach employed in this experimental study did

TABLE 2

CORRELATION OF DEMOGRAPHIC, TREATMENT, AND TEST VARIABLES N=57 PAIRS (EXCEPT ALL CORRELATIONS INVOLVING TEMPLIN-DARLEY TEST WHERE N=53 PAIRS)

		Sex	Teacher	Treatment--Spanish	Treatment--English	Treatment--Bilingual	Treatment--Control	Age in Months	Peabody Pretest	Peabody Posttest	ITPA Aud. Voc. Aut.	ITPA Aud. Voc. Ass.	Barclay Test	Vance Spat. Rel. A	Vance Spat. Rel. B	Vance Sp. S. Disc.	Add. Sp. S. Items	Trager Ling. Quest.	Templin-Darley	Peabody	ITPA Aud. Voc. Aut.	ITPA Aud. Voc. Ass.	Barclay Test	Vance Spat. Rel. A	Vance Spat. Rel. B	Vance Sp. S. Disc.	Add. Sp. S. Items	Trager Ling. Quest.	Templin-Darley	Mean	Standard Deviation
	Sex (1=M, 2=F)																														
	Teacher (T1, T2)	.05																													
	Treatment--Spanish	.11	-.09																												
	Treatment--English	-.07	.07	-.29																											
	Treatment--Bilin.	-.11	.10	-.31	-.37																										
	Treatment--Control	.09	-.09	-.29	-.36	-.37																									
	Age in Months	-.18	-.05	.00	-.17	-.06	.22																							61.35	5.16
	Peabody Pretest	-.13	-.20	-.04	-.37	.11	.30	.24																						25.77	14.45
Posttest	Peabody	-.21	-.12	-.10	-.31	.23	.16	.37	.80																					32.39	12.76
	ITPA Aud. Voc. Aut.	.02	-.17	.18	-.30	.14	.00	.10	.40	.43																				5.75	3.42
	ITPA Aud. Voc. Ass.	-.02	-.56	-.02	-.20	-.01	.22	.13	.56	.43	.44																			8.60	3.84
	Barclay Test	.02	-.22	.09	-.07	.01	-.02	-.01	.62	.62	.57	.51																		10.89	5.02
	Vance Spat. R. A	-.24	-.13	-.02	-.05	.03	.04	.13	.49	.51	.35	.34	.38																	2.51	1.24
	Vance Spat. R. B	-.25	-.26	.09	-.11	.16	-.13	.04	.47	.48	.31	.38	.31	.45																5.75	2.23
	Vance Sp. S. Disc.	-.08	-.11	.01	-.16	.04	.12	.17	.50	.55	.20	.37	.38	.34	.44															43.[illegible]	7.91
	Add. Sp, S. Items	-.05	-.36	.01	-.22	.02	.19	.17	.55	[illegible]	[illegible]	.47	.50	.42	.35	.46														12.30	3.02
	Trager Ling. Quest.	-.15	-.08	-.12	-.08	.22	-.03	.02	.4[illegible]	.59	.36	.36	.41	.47	.33	.36	.47													1.26	1.41
	Templin-Darley	.14	.15	-.03	-.34	.16	.21	.12	.13	.25	.41	.11	.04	.01	-.06	.02	.03	.07												36.28	6.77
Followup Test	Peabody	-.30	-.14	.00	-.23	.05	.18	.26	.76	.77	.28	.43	.49	.42	.42	.47	.52	.3[illegible]	.13											40.67	12.76
	ITPA Aud. Voc. Aut.	.04	-.12	.02	-.37	.11	.23	.11	.68	.62	.53	.44	.53	.35	.38	.43	.49	.41	.25	.63										6.54	3.62
	ITPA Aud. Voc. Ass.	-.12	-.14	.02	-.27	.04	.20	.24	.78	.72	.37	.49	.52	.50	.40	.63	.61	.43	.07	.75	.68									10.86	4.95
	Barclay Test	-.02	-.14	.14	-.38	.15	.10	.21	.78	.75	.39	.36	.59	.51	.50	.52	.55	.54	.07	.74	.70	.80								12 35	5.08
	Vance Spat. R. A	-.05	-.13	.09	-.33	.25	.00	.11	.55	.49	.44	.38	.52	.47	.33	.45	.43	.32	.07	.55	.55	.68	.63							3.33	1.22
	Vance Spat. R. B	-.04	.06	.06	-.23	.14	.03	.21	.48	.59	.42	.26	.49	.39	.36	.54	.46	.22	.14	.54	.51	.68	.57	.65						7.26	2.40
	Vance Sp. S. Disc.	-.13	-.18	.10	-.30	.08	.13	.15	.64	.62	.29	.39	.50	.40	.43	.64	.52	.33	-.01	.75	.51	.76	.73	.54	.53					48.58	8.23
	Add. Sp. S. Items	-.12	.00	-.08	-.14	.06	.14	.14	.54	.63	.43	.36	.53	.21	.31	.45	.52	.25	.23	.68	.56	.65	.49	.44	.70	.56				14.28	2.44
	Trager Ling. Quest.	-.06	-.19	.07	.00	.03	-.03	.01	.32	.28	.43	.37	.37	.22	.06	.26	.31	.30	.15	.28	.26	.42	.28	.37	.36	.24	.30			0.81	1.29
	Templin-Darley	.15	-.09	.07	-.39	.19	.14	.14	.51	.58	.37	.33	.39	.13	.19	.40	.57	.31	.55	.50	.56	.57	.58	.45	.44	.51	.51	.31		37.17	9.71

Correlations ≥ .27 are statistically significant from zero at the .05 level; correlations ≥ .35, at the .01 level

TABLE 3A

1 x 2 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	66.19	1	66.19	1.10	
Error	3912.78	64	61.14		
Total	3979.97	65			

F (1,64) $\geq$ 4.00 P $<$ .05; F (1,64) $\geq$ 7.08 P $<$ .01

TABLE 3B

MEAN SCORES PEABODY PICTURE VOCABULARY TEST

	Spanish, English and Bilingual	Control
Posttest	29.94	33.47
Adjusted	31.44	29.07

TABLE 4A

1 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC TEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	4.76	1	4.76	0.52	
Error	582.00	64	9.09		
Total	586.76	65			

$F\ (1,64) \geq 4.00$ $P < .05$; $F\ (1,64) \geq 7.08$ $P < .01$

TABLE 4B

MEAN SCORES ITPA AUDITORY-VOCAL AUTOMATIC TEST

	Spanish, English and Bilingual	Control
Posttest	5.52	5.71
Adjusted	5.73	5.10

TABLE 5A

1 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION TEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	6.56	1	6.56	0.66	
Error	639.31	64	9.99		
Total	645.87	65			

F (1,64) $\geq$ 4.00 P $<$ .05; F (1,64) $\geq$ 7.08 P $<$ .01

TABLE 5B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION TEST

	Spanish, English and Bilingual	Control
Posttest	7.82	9.77
Adjusted	8.13	8.87

TABLE 6A

1 x 2 ANALYSIS OF COVARIANCE OF BARCLAY TEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	48.99	1	48.99	3.02	
Error	1036.85	64	16.20		
Total	1085.84	65			

$F(1,64) \geq 4.00 \quad P < .05;\ F(1,64) \geq 7.08 \quad P < .01$

TABLE 6B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	Spanish, English and Bilingual	Control
Posttest	10.68	10.35
Adjusted	11.11	9.09

TABLE 7A

1 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	0.51	1	0.51	0.43	
Error	75.34	64	1.18		
Total	75.85	65			

$F (1,64) \geq 4.00$ $P < .05$; $F (1,64) \geq 7.08$ $P < .01$

TABLE 7B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST

	Spanish, English and Bilingual	Control
Posttest	2.40	2.53
Adjusted	2.48	2.28

TABLE 8A

1 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	15.66	1	15.66	3.80	
Error.	263.73	64	4.11		
Total	279.39	65			

$F\ (1,64) \geq 4.00\quad P < .05;\ F\ (1,64) \geq 7.08\quad P < .01$

TABLE 8B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST

	Spanish, English and Bilingual	Control
Posttest	5.66	5.24
Adjusted	5.84	4.70

TABLE 9A

1 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	0.66	1	0.66	0.02	
Error	2825.89	64	44.15		
Total	2826.55	65			

$F\ (1,64) \geq 4.00\quad P < .05;\ F\ (1,64) \geq 7.08\quad P < .01$

TABLE 9B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST

	Spanish, English and Bilingual	Control
Posttest	42.38	44.65
Adjusted	42.89	43.14

TABLE 10A

1 x 2 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	2.13	1	2.13	0.38	
Error	363.82	64	5.68		
Total	365.95	65			

F (1,64) $\geq$ 4.00 P $<$ .05; F (1,64) $\geq$ 7.08 P $<$ .01

TABLE 10B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	Spanish, English and Bilingual	Control
Posttest	11.96	13.18
Adjusted	12.16	12.58

TABLE 11A

1 x 2 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	2.26	1	2.26	1.63	
Error	88.75	64	1.39		
Total	91.01	65			

$F\ (1,64) \geq 4.00 \quad P < .05;\ F\ (1,64) \geq 7.08 \quad P < .01$

TABLE 11B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	Spanish, English and Bilingual	Control
Posttest	1.26	1.18
Adjusted	1.35	0.91

TABLE 12A

1 x 2 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--POSTTEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	26.73	1	26.73	0.62	
Error	2621.91	61	42.98		
Total	2648.64	62			

$F(1,61) \geq 4.00$ $P < .05$; $F(1,61) \geq 7.08$ $P < .01$

TABLE 12B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	Spanish, English and Bilingual	Control
Posttest	35.85	37.94
Adjusted	36.00	37.52

TABLE 13A

1 x 2 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	10.59	1	10.59	0.13	
Error	4344.31	54	80.45		
Total	3354.90	55			

$F(1,54) \geq 4.03 \quad P < .05; \quad F(1,54) \geq 7.17 \quad P < .01$

TABLE 13B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	Spanish, English and Bilingual	Control
Followup Test	38.31	44.47
Adjusted	40.20	39.17

TABLE 14A

1 x 2 ANALYSIS OF COVARIANCE OF
ITPA AUDITORY-VOCAL AUTOMATIC TEST--FOLLOWUP TEST
COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	0.48	1	0.48	0.06	
Error	398.84	54	7.39		
Total	399.32	55			

$F\ (1,54) \geq 4.03 \quad P < .05; \quad F\ (1,54) \geq 7.17 \quad P < .01$

TABLE 14B

MEAN SCORES OF TREATMENT GROUPS
ITPA AUDITORY-VOCAL AUTOMATIC TEST

	Spanish, English and Bilingual	Control
Followup Test	6.07	7.93
Adjusted	6.50	6.72

TABLE 15A

1 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION TEST--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	1.37	1	1.37	0.14	
Error	527.25	54	9.76		
Total	528.62	55			

$F\ (1.54) \geq 4.03\quad P < .05;\ F\ (1.54) \geq 7.17\quad P < .01$

TABLE 15B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION TEST

	Spanish, English and Bilingual	Control
Followup Test	10.26	12.53
Adjusted	10.96	10.59

TABLE 16A

1 x 2 ANALYSIS OF COVARIANCE OF BARCLAY TEST--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	28.28	1	28.28	2.64	
Error	578.15	54	10.71		
Total	606.44	55			

$F(1,54) \geq 4.03$ $P < .05$; $F(1,54) \geq 7.17$ $P < .01$

TABLE 16B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	Spanish, English and Bilingual	Control
Followup Test	11.95	13.20
Adjusted	12.72	11.04

TABLE 17A

1 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	2.35	1	2.35	2.23	
Error.	57.07	54	1.06		
Total	59.42	55			

$F\ (1,54) \geq 4.03 \quad P < .05; \ F\ (1,54) \geq 7.17 \quad P < .01$

TABLE 17B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST--SPATIAL RELATIONS A SUBTEST

	Spanish, English and Bilingual	Control
Followup Test	3.29	3.33
Adjusted	3.42	2.94

TABLE 18A

1 x 2 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS B SUBTEST--FOLLOWUP TEST
COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	4.37	1	4.37	1.05	
Error.	224.24	54	4.15		
Total	228.61	55			

F (1,54) $\geq$ 4.03 P $<$ .05; F (1,54) $\geq$ 7.17 P $<$ .01

TABLE 18B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST--SPATIAL RELATIONS B SUBTEST

	Spanish, English and Bilingual	Control
Followup Test	7.26	7.40
Adjusted	7.47	6.81

TABLE 19A

1 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	7.41	1	7.41	0.15	
Error.	2685.61	54	49.73		
Total	2693.02	55			

$F\ (1,54) \geq 4.03 \quad P < .05; \quad F\ (1,54) \geq 7.17 \quad P < .01$

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST

	Spanish, English and Bilingual	Control
Followup Test	47.14	50.40
Adjusted	48.23	47.37

TABLE 20A

1 x 2 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	0.04	1	0.04	0.01	
Error	355.31	54	6.58		
Total	355.35	55			

$F\ (1,54) \geq 4.03 \quad P < .05; \quad F\ (1,54) \geq 7.17 \quad P < .01$

TABLE 20B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	Spanish, English and Bilingual	Control
Followup Test	13.74	14.87
Adjusted	14.02	14.08

TABLE 21A

1 x 2 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	1.82	1	1.82	1.21	
Error	81.14	54	1.50		
Total	82.97	55			

F (1,54) ≥ 4.03 P < .05; F (1,54) ≥ 7.17 P < .01

TABLE 21B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	Spanish, English and Bilingual	Control
Followup Test	0.83	0.73
Adjusted	0.92	0.49

TABLE 22A

1 x 2 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--FOLLOWUP TEST COMBINED TREATMENT GROUPS vs. CONTROLS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Treatment	1.72	1	1.72	0.02	
Error	3606.77	50	72.14		
Total	3608.49	51			

F (1,50) ≥ 4.03 P < .05; F (1,50) ≥ 7.17 P < .01

TABLE 22B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	Spanish, English and Bilingual	Control
Followup Test	36.40	39.54
Adjusted	37.06	37.50

not result in significantly more language learning than a placebo approach involving music and art activities.

One caution should be added here. A small possibility may exist that, because of the initially great differences in English ability between treatment groups as shown in Table 1, the combining of all treatment groups in comparing them to the combined control groups may have obscured real differences. The mean score of the two combined control groups on the PPVT pretest was higher than that of any of the other combined groups and therefore of the total experimental group. Furthermore, great differences existed between the mean scores of the six experimental groups. So it may be, though the possibility is remote, that differences may have existed between some of the experimental groups and the control groups due to the experimental treatment and yet these differences did not become apparent when the experimental groups were combined.

Analyses of Covariance Related to Hypothesis 2

To determine whether the Bilingual treatment was superior to either the Spanish or English treatments, 2 x 2 analyses of covariance were done for all posttest and followup test variables, using the Peabody pretest score as the covariate, with two treatments x two teachers in each analysis. Tables 23-32 show the Spanish vs. Bilingual analyses on the posttests, and Tables 33-42 on the corresponding followup tests. Tables 43-52 show the English vs.

Bilingual analyses on the posttests, and Tables 53-62 those on the corresponding followup tests.

In the analyses of the Spanish vs. Bilingual posttests, three instances supportive of Hypothesis 2 were found. There was treatment effect ($p < .05$) on the PPVT (see Table 23a) with the Bilingual groups higher than the Spanish. But since there was also a teacher x treatment interaction effect ($p < .05$) on this test, the effect seems due to Teacher 2's Bilingual group, which did far better than any other groups. Even after the adjustment of mean scores on the basis of the covariate, this group clearly outperformed all others with an adjusted mean score of 43.79, while Teacher 1's Bilingual group had a score of 32.77, and the two comparable Spanish groups had mean scores of 22.16 and 28.67 respectively.

On the Barclay Test posttest, there was also a significant teacher x treatment interaction effect ($p < .01$) with Teacher 2's Bilingual group again far superior to all others (see Table 26a). This superiority again remained even after the means were adjusted for the effect of the covariate, with this group performing at a mean of 14.72, the other Bilingual group at 8.54, and the two Spanish groups at 10.11 and 12.37 respectively.

In addition, there were significant teacher effects ($p < .01$) on both ITPA subtests, Auditory-Vocal Automatic and Auditory-Vocal Association (see Tables 24a and 25a).

In both instances Teacher 2's groups were higher than those of Teacher 1, and this advantage remained even after the means were adjusted on the basis of the covariate. Again, the highest group of all was Teacher 2's Bilingual group, followed by Teacher 2's Spanish group.

Thus, for a total of ten test variables, one main effect supportive of the research hypothesis (but weakened by the presence of an interaction effect), two other teacher effects, and two teacher x treatment interaction effects were found in a comparison of the Spanish and Bilingual groups on the posttest battery.

The Spanish vs. Bilingual followup test analyses revealed no significant teacher, treatment, or interaction effects on any of the ten test variables. Thus, except for the single case of the PPVT posttest, analyses of both posttest and followup test scores did not show the Bilingual treatment superior to the Spanish treatment. And in that one instance, the presence of an interaction effect indicated that the main effect was probably due to the superiority of one particular treatment group only. Thus the null hypothesis is accepted in 19 of 20 instances, and cannot be clearly rejected even in the remaining instance. Hypothesis 2 must therefore be rejected for the comparison of the Spanish and Bilingual treatments.

In the analyses of the English vs. Bilingual posttest scores, one significant treatment effect, one significant

TABLE 23A

2 x 2 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	22.27	1	22.27	0.28	
Treatment	365.36	1	365.36	4.58	.05
Teacher x Treatment	381.24	1	381.24	4.78	.05
Covariate	2188.73	1	2188.73	27.42	.01
Residual	2235.12	28	79.83		
Total	6683.89	32			

$F(1,28) \geq 4.20$ $P < .05$; $F(1,28) \geq 7.64$ $P < .01$

TABLE 23B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	Spanish	Bilingual	Total
Teacher 1	26.56	30.36	28.65
Teacher 2	25.33	47.57	37.31
Both	26.07	37.05	

TABLE 24A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC TEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	37.81	1	37.81	7.64	.01
Treatment	0.51	1	0.51	0.10	
Teacher x Treatment	5.63	1	5.63	1.14	
Covariate	62.19	1	62.19	12.56	.01
Residual	138.66	28	4.95		
Total	310.06	32			

$F(1,28) \geq 4.20$ $P < .05$; $F(1,28) \geq 7.64$ $P < .01$

TABLE 24B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL AUTOMATIC TEST

	Spanish	Bilingual	Total
Teacher 1	5.33	4.82	5.05
Teacher 2	7.50	9.43	8.63
Both	6.11	6.56	

TABLE 25A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION TEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	133.75	1	133.75	27.80	.01
Treatment	5.23	1	5.23	1.09	
Teacher x Treatment	0.003	1	0.003	0.00	
Covariate	50.50	1	50.50	10.50	.01
Residual	134.73	28	4.81		
Total	435.52	32			

$F(1,28) \geq 4.20$ $P < .05$; $F(1,28) \geq 7.64$ $P < .01$

TABLE 25B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION TEST

	Spanish	Bilingual	Total
Teacher 1	5.33	6.73	6.10
Teacher 2	10.33	12.43	11.46
Both	7.33	8.95	

TABLE 26A

2 x 2 ANALYSIS OF COVARIANCE OF BARCLAY TEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	22.87	1	22.87	1.71	
Treatment	9.36	1	9.36	0.70	
Teacher x Treatment	105.16	1	105.16	7.86	.01
Covariate	163.07	1	163.07	12.18	.01
Residual	374.83	28	13.39		
Total	802.91	32			

$F(1,28) \geq 4.20 \quad P < .05; \quad F(1,28) \geq 7.64 \quad P < .01$

TABLE 26B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	Spanish	Bilingual	Total
Teacher 1	11.78	7.91	9.65
Teacher 2	11.00	15.71	13.54
Both	11.47	10.94	

TABLE 27A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.83	1	0.83	0.46	
Treatment	0.004	1	0.004	0.002	
Teacher x Treatment	0.07	1	0.07	0.04	
Covariate	7.00	1	7.00	3.88	
Residual	50.52	28	1.80		
Total	62.06	32			

$F(1,28) \geq 4.20$ $P < .05$; $F(1,28) \geq 7.64$ $P < .01$

TABLE 27B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST--SPATIAL RELATIONS A SUBTEST

	Spanish	Bilingual	Total
Teacher 1	2.00	2.27	2.15
Teacher 2	2.67	3.00	2.85
Both	2.27	2.55	

TABLE 28A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	2.89	1	2.89	0.64	
Treatment	0.61	1	0.61	0.14	
Teacher x Treatment	4.38	1	4.38	0.97	
Covariate	69.75	1	69.75	15.54	.01
Residual	125.71	28	4.49		
Total	234.55	32			

$F(1,28) \geq 4.20$ $P < .05$; $F(1,28) \geq 7.64$ $P < .01$

TABLE 28B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST--SPATIAL RELATIONS B SUBTEST

	Spanish	Bilingual	Total
Teacher 1	5.22	4.82	5.00
Teacher 2	5.83	7.71	6.84
Both	5.46	5.94	

TABLE 29A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	6.24	1	6.24	0.09	
Treatment	3.54	1	3.54	0.05	
Teacher x Treatment	42.25	1	42.25	0.61	
Covariate	248.13	1	248.13	3.57	
Residual	1946.55	28	69.52		
Total	2316.75	32			

$F\ (1,28) \geq 4.20 \quad P < .05;\ F\ (1,28) \geq 7.64 \quad P < .01$

TABLE 29B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST

	Spanish	Bilingual	Total
Teacher 1	42.78	42.36	42.55
Teacher 2	40.83	46.57	43.92
Both	42.00	43.99	

TABLE 30A

2 x 2 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	8.38	1	8.38	2.16	
Treatment	0.20	1	0.20	0.05	
Teacher x Treatment	14.38	1	14.38	3.71	
Covariate	48.28	1	48.28	12.46	.01
Residual	108.49	28	3.87		
Total	216.97	32			

$F\ (1,28) \geq 4.20\quad P < .05;\ F\ (1,28) \geq 7.64\quad P < .01$

TABLE 30B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	Spanish	Bilingual	Total
Teacher 1	12.00	11.00	11.45
Teacher 2	12.33	14.71	13.61
Both	12.13	12.44	

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TABLE 31A

2 x 2 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.27	1	1.27	0.90	
Treatment	1.09	1	1.09	0.77	
Teacher x Treatment	0.03	1	0.03	0.02	
Covariate	6.22	1	6.22	4.41	.05
Residual	39.48	28	1.41		
Total	49.64	32			

$F(1,28) \geq 4.20$ $P < .05$; $F(1,28) \geq 7.64$ $P < .01$

TABLE 31B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	Spanish	Bilingual	Total
Teacher 1	1.11	1.64	1.40
Teacher 2	0.83	1.71	1.30
Both	1.00	1.67	

TABLE 32A

2 x 2 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--POSTTEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.13	1	0.13	0.00	
Treatment	21.47	1	21.47	0.54	
Teacher x Treatment	68.95	1	68.95	1.72	
Covariate	28.84	1	28.84	0.72	
Residual	1082.32	27	40.08		
Total	1224.88	31			

$F(1,27) \geq 4.21$ $P < .05$; $F(1,27) \geq 7.68$ $P < .01$

TABLE 32B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	Spanish	Bilingual	Total
Teacher 1	37.33	36.70	37.00
Teacher 2	34.67	40.43	37.07
Both	36.27	38.24	

TABLE 33A

2 x 2 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	2.72	1	2.72	0.03	
Treatment	19.87	1	19.87	0.19	
Teacher x Treatment	31.48	1	31.48	0.31	
Covariate	2584.31	1	2584.31	25.31	.01
Residual	2246.54	22	102.12		
Total	5188.68	26			

$F\ (1,22) \geq 4.30 \quad P < .05; \quad F\ (1,22) \geq 7.94 \quad P < .01$

TABLE 33B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	Spanish	Bilingual	Total
Teacher 1	42.00	38.00	39.33
Teacher 2	39.67	47.50	43.59
Both	40.73	41.56	

TABLE 34A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC TEST--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	3.39	1	3.39	0.34	
Treatment	0.06	1	0.06	0.01	
Teacher x Treatment	6.24	1	6.24	0.62	
Covariate	116.10	1	116.10	11.49	.01
Residual	222.27	22	10.10		
Total	384.00	26			

$F(1,22) \geq 4.30$ $P < .05$; $F(1,22) \geq 7.94$ $P < .01$

TABLE 34B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL AUTOMATIC TEST

	Spanish	Bilingual	Total
Teacher 1	6.80	5.90	6.20
Teacher 2	6.67	9.33	8.00
Both	6.73	7.19	

TABLE 35A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION TEST--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.006	1	0.006	0.00	
Treatment	4.80	1	4.80	0.39	
Teacher x Treatment	3.33	1	3.33	0.27	
Covariate	293.21	1	293.21	23.78	.01
Residual	271.26	22	12.33		
Total	607.85	26			

$F\ (1,22) \geq 4.30\quad P < .05;\ F\ (1,22) \geq 7.94\quad P < .01$

TABLE 35B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION TEST

	Spanish	Bilingual	Total
Teacher 1	11.40	9.80	10.33
Teacher 2	10.83	13.17	12.00
Both	11.09	11.06	

TABLE 36A

2 x 2 ANALYSIS OF COVARIANCE OF BARCLAY TEST--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	3.18	1	3.18	0.26	
Treatment	15.88	1	15.88	1.30	
Teacher x Treatment	10.61	1	10.61	0.87	
Covariate	417.46	1	417.46	34.07	.01
Residual	269.58	22	12.25		
Total	750.74	26			

$F\ (1,22) \geq 4.30\quad P < .05;\ F\ (1,22) \geq 7.94\quad P < .01$

TABLE 36B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	Spanish	Bilingual	Total
Teacher 1	14.80	11.90	12.87
Teacher 2	13.00	15.67	14.37
Both	13.82	13.31	

TABLE 37A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.19	1	1.19	0.93	
Treatment	0.08	1	0.08	0.06	
Teacher x Treatment	0.29	1	0.29	0.23	
Covariate	11.94	1	11.94	9.32	.01
Residual	28.19	22	1.28		
Total	46.00	26			

$F(1,22) \geq 4.30$ $P < .05$; $F(1,22) \geq 7.94$ $P < .01$

TABLE 37B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST--SPATIAL RELATIONS A SUBTEST

	Spanish	Bilingual	Total
Teacher 1	3.40	7.30	3.33
Teacher 2	3.67	4.50	4.08
Both	3.55	3.75	

TABLE 38A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.36	1	0.36	0.12	
Treatment	0.37	1	0.37	0.12	
Teacher x Treatment	2.60	1	2.60	0.87	
Covariate	28.22	1	28.22	9.43	.01
Residual	65.85	22	2.99		
Total	103.41	26			

$F(1,22) \geq 4.30$ $P < .05$; $F(1,22) \geq 7.94$ $P < .01$

TABLE 38B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST--SPATIAL RELATIONS B SUBTEST

	Spanish	Bilingual	Total
Teacher 1	8.00	7.60	7.73
Teacher 2	7.17	8.83	8.00
Both	7.55	8.06	

TABLE 39A

2 x 2 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPEECH SOUND DISCRIMINATION SUBTEST--FOLLOWUP TEST
SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.69	1	0.69	0.01	
Treatment	29.88	1	29.88	0.52	
Teacher x Treatment	67.69	1	67.69	1.18	
Covariate	781.00	1	781.00	13.60	.01
Residual	1263.75	22	57.44		
Total	2281.31	26			

$F(1,22) \geq 4.30$ $P < .05$; $F(1,22) \geq 7.94$ $P < .01$

TABLE 39B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST
SPEECH SOUND DISCRIMINATION SUBTEST

	Spanish	Bilingual	Total
Teacher 1	52.00	46.50	48.33
Teacher 2	48.67	53.83	51.25
Both	50.18	49.25	

TABLE 40A

2 x 2 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.26	1	0.26	0.06	
Treatment	0.83	1	0.83	0.19	
Teacher x Treatment	0.04	1	0.04	0.01	
Covariate	37.22	1	37.22	8.37	.01
Residual	97.82	22	4.45		
Total	143.63	26			

$F(1,22) \geq 4.30$ $P < .05$; $F(1,22) \geq 7.94$ $P < .01$

TABLE 40B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	Spanish	Bilingual	Total
Teacher 1	13.80	14.10	14.00
Teacher 2	14.00	15.33	14.67
Both	13.91	14.56	

TABLE 41A

2 x 2 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	3.87	1	3.87	1.84	
Treatment	0.28	1	0.28	0.13	
Teacher x Treatment	0.05	1	0.05	0.02	
Covariate	3.99	1	3.99	1.90	
Residual	46.15	22	2.20		
Total	57.41	26			

$F(1,22) \geq 4.30 \quad P < .05$; $F(1,22) \geq 7.94 \quad P < .01$

TABLE 41B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	Spanish	Bilingual	Total
Teacher 1	0.60	0.30	0.40
Teacher 2	1.33	1.50	1.42
Both	1.00	0.75	

TABLE 42A

2 x 2 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--FOLLOWUP TEST SPANISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	13.70	1	13.70	0.25	
Treatment	0.14	1	0.14	0.00	
Teacher x Treatment	109.29	1	109.29	1.99	
Covariate	245.48	1	245.48	4.46	.05
Residual	1100.07	20	55.00		
Total	1520.25	24			

$F(1,20) \geq 4.35$ $P < .05$; $F(1,20) \geq 8.10$ $P < .01$

TABLE 42B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	Spanish	Bilingual	Total
Teacher 1	41.60	38.25	39.54
Teacher 2	36.00	42.83	39.42
Both	38.55	40.21	

teacher effect, and two significant teacher x treatment interactions were found. On the ITPA Auditory-Vocal Automatic Test, both a treatment effect ($p < .01$) and an interaction effect ($p < .01$) were found (see Table 44a).

Here again, the superiority of the Bilingual to the English treatment must be ascribed in large measure to the high mean score of Teacher 2's Bilinguals, rather than to any clear treatment effect. However, the extremely low score of Teacher 2's English group was probably also a determining factor. Thus even after the adjustment of means on the basis of the covariate, Teacher 2's English group had a mean score of 2.26, her Bilinguals 8.87, Teacher 1's English group 4.66, and Teacher 1's Bilinguals 5.17. Since there was a significant interaction effect, the treatment effect must be largely discounted.

On the ITPA Auditory-Vocal Association Test (see Table 45a), there was a significant teacher effect ($p < .01$). As with previous teacher effects reported in this study, this was due to the superiority of Teacher 2's groups over those of Teacher 1. This remains evident in an examination of the adjusted mean scores which show that both the English and Bilingual groups of Teacher 2 did better, with mean scores of 8.52 and 11.36 respectively, than the comparable groups of Teacher 1, 5.98 and 7.41. As usual, Teacher 2's Bilinguals did the best of all.

Finally, a significant teacher x treatment interaction

($p < .05$) was found on the Barclay Test (see Table 46a). This again can be ascribed to the superiority of Teacher 2's Bilingual group, a superiority that persisted after the adjustment of means based upon covariate scores.

The analyses of the followup tests for the English vs. Bilingual groups showed that there were no significant effects on any of the test variables. Thus for the English vs. Bilingual comparisons, there was only one test out of 20, in this case the ITPA Auditory-Vocal Automatic Posttest, for which a significant treatment effect could be noted. Furthermore, the clearcut significance of this effect is doubtful, since a teacher x treatment interaction effect was also found on this test. Thus in 19 out of 20 instances, the null hypothesis is clearly sustained and the research hypothesis rejected; in one instance there is some support for the research hypothesis but not enough for a clear rejection of the null hypothesis. Hypothesis 2 must therefore be rejected for the comparison of English and Bilingual treatments also.

It should be noted that in all comparisons dealing with Hypothesis 2, the superiority of Teacher 2's Bilingual group must be taken into account. In spite of the random assignment of individuals to treatment groups, this group started out by chance with much higher performance in English, as shown by their higher scores on the PPVT pretest. Not all of this initial superiority can be eliminated through the use

TABLE 43A

2 x 2 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	147.66	1	147.66	2.40	
Treatment	162.63	1	162.63	2.64	
Teacher x Treatment	207.63	1	207.63	3.38	
Covariate	1677.10	1	1677.10	27.27	.01
Residual	1845.05	30	61.50		
Total	5884.18	34			

$F\ (1,30) \geq 4.17 \quad P < .05; \quad F\ (1,30) \geq 7.56 \quad P < .01$

TABLE 43B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	English	Bilingual	Total
Teacher 1	26.33	30.36	28.55
Teacher 2	25.38	47.57	35.74
Both	25.88	37.05	

TABLE 44A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC TEST--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	7.39	1	7.39	1.61	
Treatment	43.48	1	43.48	9.45	.01
Teacher x Treatment	64.87	1	64.87	14.10	.01
Covariate	16.81	1	16.81	3.65	
Residual	138.04	30	4.60		
Total	332.17	34			

$F(1,30) \geq 4.17$ $P < .05$; $F(1,30) \geq 7.56$ $P < .01$

TABLE 44B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL AUTOMATIC TEST

	English	Bilingual	Total
Teacher 1	4.67	4.82	4.75
Teacher 2	2.75	9.43	5.80
Both	3.77	6.56	

TABLE 45A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION TEST--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	75.93	1	75.93	12.19	.01
Treatment	0.25	1	0.25	0.04	
Teacher x Treatment	2.44	1	2.44	0.39	
Covariate	117.02	1	117.02	18.78	.01
Residual	186.88	30	6.23		
Total	496.74	34			

$F(1,30) \geq 4.17$ $P < .05$; $F(1,30) \geq 7.56$ $P < .01$

TABLE 45B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION TEST

	English	Bilingual	Total
Teacher 1	6.00	6.73	6.40
Teacher 2	8.50	12.43	10.33
Both	7.18	8.95	

TABLE 46A

2 x 2 ANALYSIS OF COVARIANCE OF BARCLAY TEST--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	31.89	1	31.89	2.43	
Treatment	9.87	1	9.87	0.75	
Teacher x Treatment	61.09	1	61.09	4.66	.05
Covariate	253.38	1	253.38	19.34	.01
Residual	392.96	30	13.10		
Total	918.69	34			

$F(1,30) \geq 4.17$ $P < .05$; $F(1,30) \geq 7.56$ $P < .01$

TABLE 46B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	English	Bilingual	Total
Teacher 1	10.33	7.91	9.00
Teacher 2	9.50	15.71	12.40
Both	9.94	10.94	

TABLE 47A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.15	1	0.15	0.11	
Treatment	0.40	1	0.40	0.29	
Teacher x Treatment	1.23	1	1.23	0.90	
Covariate	6.19	1	6.19	4.55	.05
Residual	40.86	30	1.36		
Total	50.74	34			

$F\ (1,30) \geq 4.17\quad P < .05;\ F\ (1,30) \geq 7.56\quad P < .01$

TABLE 47B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS A SUBTEST

	English	Bilingual	Total
Teacher 1	2.67	2.27	2.45
Teacher 2	2.13	3.00	2.54
Both	2.45	2.55	

TABLE 48A

2 x 2 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS B SUBTEST--POSTTEST
ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	5.49	1	5.49	1.29	
Treatment	0.002	1	0.002	0.00	
Teacher x Treatment	10.15	1	10.15	2.38	
Covariate	24.03	1	24.03	5.63	.05
Residual	128.13	30	4.27		
Total	192.17	34			

$F\ (1,30) \geq 4.17 \quad P < .05; \quad F\ (1,30) \geq 7.56 \quad P < .01$

TABLE 48B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS B SUBTEST

	English	Bilingual	Total
Teacher 1	5.44	4.82	5.10
Teacher 2	5.13	7.71	6.36
Both	5.29	5.94	

TABLE 49A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	14.33	1	14.33	0.21	
Treatment	0.12	1	0.12	0.00	
Teacher x Treatment	0.63	1	0.63	0.01	
Covariate	275.74	1	275.74	3.99	
Residual	2071.65	30	69.06		
Total	2497.57	34			

$F\ (1,30) \geq 4.17 \quad P < .05; \quad F\ (1,30) \geq 7.56 \quad P < .01$

TABLE 49B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST

	English	Bilingual	Total
Teacher 1	40.56	42.36	41.55
Teacher 2	42.13	46.57	44.20
Both	41.30	43.99	

TABLE 50A

2 x 2 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	17.35	1	17.35	2.32	
Treatment	0.00	1	0.00	0.00	
Teacher x Treatment	4.03	1	4.03	0.54	
Covariate	64.32	1	64.32	8.62	.01
Residual	223.87	30	7.46		
Total	362.29	34			

$F\ (1,30) \geq 4.17 \quad P < .05; \quad F\ (1,30) \geq 7.56 \quad P < .01$

TABLE 50B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	English	Bilingual	Total
Teacher 1	10.89	11.00	10.95
Teacher 2	11.63	14.71	13.07
Both	11.24	12.44	

TABLE 51A

2 x 2 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.30	1	0.30	0.19	
Treatment	0.001	1	0.001	0.00	
Teacher x Treatment	0.86	1	0.86	0.55	
Covariate	10.14	1	10.14	6.51	.05
Residual	46.71	30	1.56		
Total	60.17	34			

$F\ (1,30) \geq 4.17\quad P < .05;\ F\ (1,30) \geq 7.56\quad P < .01$

TABLE 51B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	English	Bilingual	Total
Teacher 1	1.00	1.64	1.35
Teacher 2	1.13	1.71	1.40
Both	1.06	1.67	

TABLE 52A

2 x 2 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--POSTTEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	3.73	1	3.73	0.10	
Treatment	145.14	1	145.14	3.79	
Teacher x Treatment	47.45	1	47.45	1.24	
Covariate	9.65	1	9.65	0.25	
Residual	1073.07	28	38.32		
Total	1385.35	32			

$F\ (1,28) \geq 4.20 \quad P < .05; \quad F\ (1,28) \geq 7.64 \quad P < .01$

TABLE 52B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	English	Bilingual	Total
Teacher 1	33.88	36.70	35.45
Teacher 2	32.00	40.43	35.93
Both	32.94	38.24	

TABLE 53A

2 x 2 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.00	1	0.00	0.00	
Treatment	23.49	1	23.49	0.23	
Teacher x Treatment	18.01	1	18.01	0.18	
Covariate	2503.24	1	2503.24	24.62	.01
Residual	2643.35	26	101.67		
Total	5751.43	30			

$F(1,26) \geq 4.22$ $P < .05$; $F(1,26) \geq 7.72$ $P < .01$

TABLE 53B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	English	Bilingual	Total
Teacher 1	36.44	38.00	37.26
Teacher 2	34.83	47.50	41.17
Both	35.80	41.56	

TABLE 54A

2 x 2 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC TEST--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.99	1	1.99	0.26	
Treatment	15.09	1	15.09	1.96	
Teacher x Treatment	13.09	1	13.09	1.70	
Covariate	94.44	1	94.44	12.24	.01
Residual	200.63	26	7.72		
Total	404.84	30			

$F\ (1,26) \geq 4.22$ $P < .05$; $F\ (1,26) \geq 7.72$ $P < .01$

TABLE 54B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL AUTOMATIC TEST

	English	Bilingual	Total
Teacher 1	4.67	5.90	5.32
Teacher 2	3.83	9.33	6.58
Both	4.33	7.19	

TABLE 55A

2 x 2 ANALYSIS OF COVARIANCE OF
ITPA AUDITORY-VOCAL ASSOCIATION TEST--FOLLOWUP TEST
ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.24	1	0.24	0.02	
Treatment	1.15	1	1.15	0.09	
Teacher x Treatment	2.96	1	2.96	0.22	
Covariate	337.18	1	337.18	24.90	.01
Residual	352.09	26	13.54		
Total	778.71	30			

$F\ (1,26) \geq 4.22\quad P < .05;\ F\ (1,26) \geq 7.72\quad P < .01$

TABLE 55B

MEAN SCORES OF TREATMENT GROUPS
ITPA AUDITORY-VOCAL ASSOCIATION TEST

	English	Bilingual	Total
Teacher 1	9.00	9.80	9.42
Teacher 2	8.17	13.17	10.67
Both	8.67	11.06	

TABLE 56A

2 x 2 ANALYSIS OF COVARIANCE OF BARCLAY TEST--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.66	1	0.66	0.06	
Treatment	16.06	1	16.06	1.37	
Teacher x Treatment	4.59	1	4.59	0.39	
Covariate	281.09	1	281.09	24.04	.01
Residual	303.98	26	11.69		
Total	774.39				

$F(1,26) \geq 4.22$ $P < .05$; $F(1,26) \geq 7.72$ $P < .01$

TABLE 56B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	English	Bilingual	Total
Teacher 1	9.33	11.90	10.68
Teacher 2	8.83	15.67	12.25
Both	9.13	13.31	

TABLE 57A

2 x 2 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS A SUBTEST--FOLLOWUP TEST
ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.97	1	0.97	0.82	
Treatment	2.95	1	2.95	2.51	
Teacher x Treatment	0.97	1	0.97	0.82	
Covariate	8.39	1	8.39	7.14	.05
Residual	30.55	26	1.17		
Total	53.42	30			

$F(1,26) \geq 4.22$ $P < .05$; $F(1,26) \geq 7.72$ $P < .01$

TABLE 57B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS A SUBTEST

	English	Bilingual	Total
Teacher 1	2.67	3.30	3.00
Teacher 2	2.67	4.50	3.59
Both	2.67	3.75	

TABLE 58A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	2.41	1	2.41	0.49	
Treatment	8.49	1	8.49	1.72	
Teacher x Treatment	8.20	1	8.20	1.66	
Covariate	21.86	1	21.86	4.42	.05
Residual	128.71	26	4.95		
Total	189.42	30			

F (1,26) ≥ 4.22 P < .05; F (1,26) ≥ 7.72 P < .01

TABLE 58B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST

	English	Bilingual	Total
Teacher 1	7.00	7.60	7.32
Teacher 2	5.33	8.83	7.08
Both	6.33	8.06	

TABLE 59A

2 x 2 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	20.94	1	20.94	0.29	
Treatment	0.25	1	0.25	0.00	
Teacher x Treatment	6.31	1	6.31	0.09	
Covariate	869.75	1	869.75	11.89	
Residual	1901.25	26	73.13		
Total	3147.00	30			

$F(1,26) \geq 4.22$ $P < .05$; $F(1,26) \geq 7.72$ $P < .01$

TABLE 59B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST

	English	Bilingual	Total
Teacher 1	44.22	46.50	45.42
Teacher 2	45.00	53.83	49.42
Both	44.53	49.25	

TABLE 60A

2 x 2 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.66	1	0.66	0.13	
Treatment	0.55	1	0.55	0.11	
Teacher x Treatment	0.91	1	0.91	0.18	
Covariate	55.54	1	55.54	10.77	.01
Residual	134.03	26	5.16		
Total	202.20	30			

$F\ (1,26) \geq 4.22\quad P < .05;\ F\ (1,26) \geq 7.72\quad P < .01$

TABLE 60B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	English	Bilingual	Total
Teacher 1	14.00	14.10	14.05
Teacher 2	13.33	15.33	14.33
Both	13.73	14.56	

TABLE 61A

2 x 2 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.33	1	1.33	0.82	
Treatment	0.72	1	0.72	0.44	
Teacher x Treatment	1.01	1	1.01	0.63	
Covariate	5.91	1	5.91	3.65	
Residual	42.07	26	1.62		
Total	53.42	30			

$F(1,26) \geq 4.22$ $P < .05$; $F(1,26) \geq 7.72$ $P < .01$

TABLE 61B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	English	Bilingual	Total
Teacher 1	0.78	0.30	0.53
Teacher 2	0.83	1.50	1.17
Both	0.80	0.75	

TABLE 62A

2 x 2 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--FOLLOWUP TEST ENGLISH vs. BILINGUAL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	56.69	1	56.69	0.65	
Treatment	36.98	1	36.98	0.42	
Teacher x Treatment	19.35	1	19.35	0.22	
Covariate	810.97	1	810.97	9.28	.01
Residual	2097.61	24	87.40		
Total	3635.05	28			

$F\ (1,24) \geq 4.26 \quad P < .05$; $F\ (1,24) \geq 7.82 \quad P < .01$

TABLE 62B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	English	Bilingual	Total
Teacher 1	29.44	38.25	33.59
Teacher 2	34.00	42.83	38.42
Both	31.26	40.21	

of analysis of covariance. Thus the analysis of their higher scores on the posttests cannot reveal how much of this was due to their initial advantage and how much to the treatment as applied by this particular teacher. Furthermore, since this group scored so differently from all others, their inclusion in the study could have obscured some other effects that might have otherwise been discernible.

2 x 4 Analyses of Covariance

2 x 4 analyses of covariance, comparing the two teachers and four treatments and using the PPVT pretest as covariate, were computed for all posttest and followup test variables. The results of these analyses are shown in Tables 63-72 for the posttests and Tables 73-82 for the followup tests. (These tables can be found in Appendix C) These analyses were done to augment the 1 x 2 analyses where all three experimental treatments were combined to compare them to the control treatment. It was hoped that these analyses would show both whether any one treatment was superior to any or all of the others and also whether a teacher effect across the four treatments did occur.

In the posttest analyses, two teacher effects and two interaction effects were significant. On the ITPA Auditory-Vocal Automatic Test (see Table 64a), there was a teacher x treatment interaction effect ($p < .05$). The largest difference between the eight teacher-treatment groups, with Teacher

2's Bilinguals the highest and her English group the lowest, turned out to be 5.40. The Scheffé method of multiple comparisons (Winer, 1962; Miller, 1966) found that this difference was not significant.

On the ITPA Auditory-Vocal Association Test (see Table 65a), a teacher effect ($p < .01$) was noted. Further analysis of the data showed that Teacher 2 had a greater effect than Teacher 1.

On the Barclay Test (see Table 66a), a significant teacher-treatment interaction ($p < .01$) was found. Again, a calculation of the eight teacher-treatment group effects and the use of the Scheffé method of multiple comparisons showed a difference significant only at the .07 level between the lowest and highest. Teacher 2's Bilingual group was the highest, followed by Teacher 1's Spanish group. Teacher 1's Bilinguals were the lowest.

The Additional Speech Sound Items (see Table 70a) showed a teacher effect significant at the .01 level. Again, Teacher 2's students did better than those of Teacher 1.

On the followup tests, there were no significant main or interaction effects for any test variables. Thus, these additional 2 x 4 analyses did not contribute substantially beyond what was already known from the 1 x 2 and 2 x 2 analyses reported earlier.

Summary

Analysis of the data collected from pretest, posttest and followup test administrations led to a number of conclusions. First of all, in spite of random assignment a comparison of group means on the PPVT pretest showed that groups differed greatly from each other in their ability to recognize the English names of common objects and therefore probably in their general command of English at the outset of the experimental program.

Second, the intercorrelations of demographic and test variables showed that the child's age and sex, the teacher in whose group he was, and the treatment condition all correlated with only a few test variables at a significant level. All tests regardless of when administered correlated highly with each other, with the exception of the posttest administration of one test. They thus appeared to measure either the same or closely related language and cognitive skills.

Third, Hypothesis 1, that a structured language training program will result in greater language development than a placebo program, was rejected on the basis of nonsignificant results on all posttests and followup test variables.

Fourth, Hypothesis 2, that the Bilingual treatment will result in greater language development than either the Spanish or English treatment was tenously supported by only two test results and clearly rejected by the other 38. Thus only on the posttest administrations of the PPVT and the ITPA Auditory-Vocal Automatic Test were there significant treatment effects in favor of the Bilingual treatment, over the Spanish treatment for the PPVT and over the English for the ITPA. However, in both instances a teacher x treatment interaction effect due to Teacher 2's Bilingual group largely canceled out the significance of the main effect. In addition, on two other tests there were teacher x treatment interaction effects favoring Teacher 2's Bilinguals over the other Bilingual group and both English groups. Thus, in two instances only, Hypothesis 2 was weakly sustained; in 38 instances it was rejected.

Finally, it is interesting to note that in almost every instance, Teacher 2's students had higher mean scores than those of Teacher 1. In addition, all significant teacher effects favored Teacher 2, and all significant interaction effects involved Teacher 2's Bilingual group. Since these children originally scored higher on the pretest than did those of Teacher 1, it may be that they both started higher and remained higher throughout the study and on into the Kindergarten year.

Thus an analysis of the data reveals that the study did not accomplish what it was intended to do. Children did not learn more language in the treatment than in the control groups; nor did the children in the Bilingual groups learn significantly more than those in the English or Spanish groups, except as shown by the results of two tests. There are some small indications that the treatment efforts did have some value, but no statistical evidence upon which such a view can be based. There are a number of circumstances that may have contributed to these disheartening results; there are also means which could have been employed to increase the power of the treatments and hence their chances of success. These will be discussed in detail in the subsequent chapter.

CHAPTER IV

SUMMARY AND IMPLICATIONS

Summary

An experimental language and concept formation training program was tested with Mexican-American Head Start children in the New Haven Unified School District, Union City, California during the summer of 1967. Sixty-seven children were randomly assigned to six experimental treatment groups and two control groups taught by two special teachers. The children were tested both at the conclusion of the summer program and again in the Spring of 1968.

The Problem. Many previous studies done with disadvantaged youngsters who had been in Head Start programs have had rather equivocal results. Either the children do not increase in their language ability and other abilities necessary to succeed in school, or gains first made in Head Start soon fade away, so that by the end of Kindergarten these children do no better on tests or other diagnostic tasks than do other disadvantaged children who have not had Head Start experience.

A number of experimental programs have recently been used in Head Start classes to determine whether any of them show greater efficacy than the more usual programs based on nursery school education concepts.

This study was designed to incorporate the structured cognitive concept formation approach stressed by Ausubel with linguistic training methods. Since many Mexican-American children are bilingual or know no English at all, and since disadvantaged children generally have less knowledge of concepts needed for school success than do middle-class children, a combined approach should have the greatest efficacy for preparing these children for the task-oriented curriculum of the early elementary grades. In addition, the study attempted to determine whether an approach using Spanish, English, or both as the language of instruction would result in the greatest language gains.

Method. A series of ten linguistic and six conceptual objectives was developed for the study, and a daily curriculum based upon these objectives was written for the three different language modes (Spanish, English, and Bilingual). All children enrolled in the Head Start program were randomly assigned to eight groups and the groups were randomly assigned to the eight treatment conditions (four treatments x two teachers). After attrition due to dropouts and non-cooperation, 82 children were left in the study. Of these, 15 were native English speakers. They were therefore not included in the statistical analysis, which was limited to the 67 Mexican-American children who remained.

Each of the three experimental treatments, replicated by the two teachers, consisted of an intensive structured training program applied daily during two short sessions within a 35-minute period. The first treatment used Spanish as the language of instruction, the second used English, and the third used both languages in approximately equal proportions. The fourth treatment was a control which involved music, art and free play activities with the same teachers for an equivalent time period. Each group met for a total of 26 times during the summer. While not in the experimental classes, the children spent their time in the regular ongoing Head Start program.

All children were pretested during the first week of the program on the Peabody Picture Vocabulary Test. Post-testing was done during the last week of the program. The posttest battery included the Peabody Picture Vocabulary Test, the Auditory Vocal Automatic and Auditory-Vocal Association Tests of the Illinois Test of Psycholinguistic Abilities, Spatial Relations A, Spatial Relations B and Speech Sound Discrimination Subtests of the Vance Language Skills Test, the Templin-Darley Test of Articulation, and three tests devised by the experimenter and called the Barclay Test, Additional Speech Sound Items, and the Trager Linguistic Questionnaire. In addition, 57 of the children who remained in the area were tested again on the entire battery during April, 1968. Test results were analyzed using correlation, two-way analyses of covariance and one-way analyses of covariance.

Results. The research hypotheses tested were as follows:

1. The use of a structured language training program, based upon both psychological and linguistic foundations, for two short time periods daily during the seven-week Head Start program will result in greater language development as measured by appropriate tests than will the use of music and art activities for commensurate time periods with bilingual and Spanish-speaking Mexican-American Head Start children.
2. A bilingual presentation of the above language training program will result in greater language development in English than either a Spanish or English presentation alone.

In spite of random assignment the group pretest scores revealed great differences existing between experimental groups initially. In addition, when posttest data were analyzed using analysis of variance and covariance, it was observed that much of the variance was accounted for by scores on the Peabody pretest. Accordingly, analysis of covariance, using the Peabody pretest as covariate, was employed with both posttest and followup test data.

Analysis of the data yielded the following results. One-way analyses of covariance, comparing the six treated groups with the two control groups, in order to test Hypothesis 1, yielded no significant results. On none of the posttest or followup test variables was there a significant F ratio favoring the treatment groups. Hypothesis 1 must therefore be rejected and the null hypothesis sustained.

Two-way analyses of covariance, comparing first the Spanish and Bilingual groups, and then the English and Bilingual groups, and comparing the two teachers, showed a few results weakly supportive of Hypothesis 2. That is, on one posttest comparison, the Bilingual group was significantly higher than the Spanish group, and on another posttest comparison the Bilingual was higher than the English group. However, in both these instances, there were also teacher x treatment interaction effects. Thus Hypothesis 2 is weakly sustained for 2 out of 20 posttest comparisons, but rejected for the remaining 18 posttest analyses and all 20 followup analyses. In general, Hypothesis 2 must therefore also be rejected and the null hypothesis sustained.

In addition, there were three instances of significant teacher effects, in all instances showing Teacher 2 higher than Teacher 1. There were also four teacher-treatment interaction effects that were significant (including the two described above); in each instance Teacher 2's Bilingual group scored far higher than any of the other groups, but it was also this group which by chance had a larger proportion of high scorers on the pretest.

Limitations

Some limitations were imposed on the study by circumstances beyond the control of the experimenter. Some of these were unforeseen, and some, while foreseen, could not be avoided in a study taking place within the format of an operating public school program. They will be discussed here briefly, and their possible effect upon the outcomes of the study will be described.

The Length of the Daily Treatment Program. Four meetings with different treatment groups had to be scheduled for each teacher daily. Since children were in school only four hours daily, and since some of this time had to be taken for snack time, recess, and lunch, only 35 minutes were left for the experimental sessions. Since four and five-year old children cannot usually sit still and concentrate for that long a time period, a break had to be included in the middle of each session. This meant in effect that the maximum possible time each child received instruction in the experimental program daily was 30 minutes. Had a longer total time been available each day, perhaps split into several short sessions, it is possible that more significant results would have been achieved.

The Total Number of Sessions. The total Head Start program lasted only seven weeks. One day each week the children went on a field trip that took up the entire morning; sessions of the experimental treatment thus could not be held. Each class thus met for a total of only 26 sessions. Furthermore, some children were tested as late as the next to last day of the first week; some posttested as early as the first day of the last week. Thus some children conceivably could have had only five weeks of training between the two test sessions. This problem, an obvious one where large groups of children must be tested individually, is also one which could have had effects on the end results.

The Nature of the Sample. All the Mexican-American children enrolled on the first day and who remained throughout the summer program were included in the study. Conceivably, those enrolled on the first day were not representative of the total Head Start group, and later enrollees should have been included. Perhaps the dropouts differed in some important way from those who stayed in. Moreover, since the number who dropped out differed somewhat from group to group, this too may have been an important factor. Further, in a consideration of the followup tests, it should be noted that ten children could not be tested as they had moved from the area. Since the ten who were not located were unevenly distributed among the eight treatment groups, this could have affected the followup test results. Finally, since children were randomly assigned regardless of age and sex factors, these differences could also have influenced the outcomes.

Inclusion of Native English Speakers. For reasons detailed earlier native English-speaking children were also included on a random basis in the eight treatment groups (though not in the statistical analysis). This was an unforeseen aspect of the study, as in previous years data on the ethnic background and language spoken had been available on each child and this year they were not. The total group, including both Mexican-American children and native English-speaking children, was thus randomly assigned to treatment groups. As a result, the number of native English speakers per group varied from a high of four to a low of none; correspondingly the number of Mexican-Americans varied from six to ten. This very likely could influence the outcome of the study, especially since some children who spoke no Spanish were placed in Spanish or Bilingual groups.

Test Administration and Scoring. As is the case in any large-scale individual testing project there were a host of unanticipated problems occurring with test administration. Pretesting had to be done right in the classrooms because there was no other space available. There was thus quite some noise and distraction. While the posttest situation was better, since some empty classrooms were available then for testing, there were still three testers in the same room concurrently. The testing circumstances were simply out of the control of the experimenter. While the followup testing was done in more private circumstances, once again the facilities of the school district did not allow for ideal testing situations. Moreover, not enough graduate school psychology students were available to administer the post-tests. Therefore, some counseling students who had had some training in testing were also used. Test subjects were assigned to particular testers on a randomized basis, but nevertheless, this is a factor to be considered. Furthermore, all tests were hand scored and even though two individuals cross-checked each other's scoring, errors could have been made. The writer and the school psychology graduate assistant employed in the project scored all tests. Though it is unlikely that any scoring bias existed such a possibility should be noted.

Implications for Future Research

In addition to the limitations imposed by circumstances upon the study reported here, another limiting factor needs to be considered. That is the power potential of the particular treatment strategies employed. Two aspects of this are the difference between learning and performance, and the children's readiness.

Research studies (Bandura and Walters, 1963; Hart & Risley, 1968) have shown that children may learn a particular behavior or series of behaviors, including those involving language, and yet not produce these behaviors with any appreciable frequency unless some powerful reinforcer is employed initially to maintain the production of the desired behaviors. No such reinforcer, except unsystematized teacher praise, was employed in the present study. It was assumed that if children learned a particular linguistic or cognitive concept, their verbalization, including that on the criterion test instruments, would indicate this learning. Hindsight leads to the conclusion that this assumption was unwarranted.

It is quite possible that in working with disadvantaged children, their language-centered behaviors can only be changed and enhanced through the employment of rigorous reinforcement techniques including the use of extremely attractive and powerful reinforcers such as food and the use of new and interesting play materials. Both the Bereiter-Engelmann studies (1966a; 1966b; Engelmann, 1968b) and the Hart and Risley study (1968) seem to point in this direction. The former have liberally used teacher praise and attention and cookies; the latter used teacher attention and permission to use desired playthings. In both instances, some encouraging results are noted. At the same time, a variety of other studies that do not rely on the use of reinforcers (e.g. Vance, 1967; Weikart et al., 1964; Nimnicht et al., 1967) show either nonsignificant results or initially promising results that tend to fade away with the passage of time.

The experimenter therefore would strongly suggest that any future replications of this study couple the language and concept formation training approach with a well-structured program of reinforcement for desired verbal behavior and that the use of reinforcers be phased out very gradually after a sufficient length of time to establish adequate rates of performance of particular verbal behaviors. It cannot be assumed that children will emit particular language constructs, even if they have learned them, without sufficient reinforcing contingencies.

Secondly, Ausubel (1963) expresses concern over the state of readiness of the learner. He posits that one condition for the success of presentation learning is the readiness of the subsuming organism. No studies other than the present one have used Ausubel's concepts of the use of advance organizers and presentation learning with children as young as Head Starters. Thus, it is possible that the treatment procedures employed in this study, while psychologically and linguistically proper, were unsuitable for children that young or at that stage of development. The time factor also enters in here. It is quite possible that if the treatment procedures could have been spread out over a longer time period, the children could have been brought to that state of readiness or maturity at which they could have profited from such instruction. Again, if such a study as the present one were to be repeated, a less concentrated curriculum, spaced over a longer time period, should be employed. Furthermore, the developmental level of the children in terms of psychological readiness for learning particular concepts needs to be more carefully investigated, and a curriculum beginning at that state of readiness and gradually directing the children to higher levels of conceptual knowledge must be developed. That is, it is not known if the present curriculum used in this study began at too high a level for the children's readiness, or whether it began at an appropriate level. Future studies need to correct this deficiency.

Conclusion

The present study seems to have raised more questions than it has answered in the development of a preschool curriculum for disadvantaged children and in testing the efficacy of such a curriculum. Nonsupport of either research hypothesis posited in this study by the data derived from it shows that this approach as presently constituted is no more beneficial in enhancing the language and cognitive learning of preschool disadvantaged children than any of the multitude of other approaches that have been employed with equally disappointing results. However, future studies might incorporate some of the ideas presented here but use larger groups, a longer time period, more powerful reinforcers, teachers better trained in the use of these techniques and a closer articulation of the curriculum with the developmental states of the children.

APPENDIX A

CURRICULUM FOR MEXICAN-AMERICAN HEAD START CHILDREN

This curriculum was prepared by the writer and Mrs. Elva Cooper, Mrs. Susan Rodriguez-Bascur, and Mr. Edgar Gallardo, the two teachers and graduate assistant employed in the project. It was used during an experimental teaching program with Mexican-American Head Start children, many of whom knew very little or no English, during the summer of 1967 in the New Haven Unified School District, Union City, California.

The help of Dr. Edith Trager of San Jose State College and of Mrs. Lily Chinn Flood of the Santa Clara County Economic Opportunity Commission in the preparation of this curriculum is gratefully acknowledged. Much of the linguistic part of the curriculum is adapted from Mrs. Flood's manual, Teaching English as a Foreign Language to Head Starters (1966). The conceptual aspects of the curriculum were the unique contribution of the four writers of the curriculum. Much use is made of picture cards and stencils from Introducing English by Louise Lancaster (Houghton-Mifflin 1966).

While the curriculum was designed principally for children for whom English was a foreign language, it would be usable with some modifications with native speakers of the language who are deficient in an understanding and use of grammatical structure and concepts. The length of each lesson is geared to the 35 minute daily period which was available during the summer program, and consists of two intensive instructional segments each approximately fifteen minutes long and a five minute break between them. However, each fifteen minute segment could be a daily lesson, with the entire curriculum then stretching on for double the total time period. Each fifteen minute segment could also be expanded, with more drill and a larger number of examples, into a thirty minute segment. One or two of these expanded segments could then be taught daily.

As presently constituted, there are lessons for 25 days. The program is thus designed to be used daily in a five week session, or on four days out of five during a six to seven week session. Repetition of a day's lesson on the following day is possible, and was done during the study reported here on two occasions when large numbers of absences on the first day made repetition on the subsequent day seem logical.

Because of the experimental nature of the program for which this curriculum was developed, some of the children received introductions and explanations of the language and conceptual content to be taught in English, some received these in Spanish, and some in both languages. The curriculum was therefore prepared, and is here reproduced, in two distinct sections. The left page for each day's lesson contains the explanatory material, introduction, and directions. This is shown first in English, and immediately below in Spanish. Depending upon which experimental group she was working with, the teacher would use only the English, only the Spanish, or both in succession. The right page contains the actual lesson, or the conceptual and linguistic content that was taught. This was used for all groups that received this instruction, and is in English only, with the exception of Day 1, when some Spanish was used. Sections of the two facing pages are numbered correspondingly, so that the teacher can present the introductory passages from the left page, look to the corresponding number on the right page, and proceed with the lesson materials under that number. Whole numbers refer to new or different material or ideas covered; decimals to subsections of these materials or ideas.

At the top of each beginning right-hand or lesson page, a short summary of what is taught in the particular lesson is given. This is divided into two sections: Concepts, showing what conceptual objectives are met by the lesson, and Language, showing what linguistic objectives are met by it. These conceptual and linguistic objectives, which are described and enumerated in detail in the body of this study, were developed by the writer as the criterion or terminal objectives to which it was hoped to instruct the children in the study.

DAY 1

1.0 Good morning, children. Come in, and form a line here. Now sit down in the chairs by the tables. I am Mrs. Rodriguez.

Buenos días, niños. Entren, y formen una línea aquí. Siéntense, por favor, en las sillas que están cerca de las mesas. Yo soy la Senora Rodriguez.

We're going to be together during the next several weeks every day. Together, we will learn many things.

En las semanas que vienen nos vamos a juntar cada día. Juntos aprenderemos muchas cosas.

2.0 Today we will learn names, because everything in the world has a name. We are going to play follow the leader, and learn the names of some of the things in our classroom.

Hoy aprenderemos nombres, porqué todas las cosas en el mundo tienen su nombre. Vamos a jugar un juego. Hagan todo lo que yo hago, y asi aprenderemos los nombres de algunas cosas en nuestra clase.

2.1 Form a line here in front of me.

Ahora, formen una línea aquí en frente de mí.

Put your hands on the shoulders of your friend in front of you. Follow me in a line like a little train.

Pongan sus manos en los hombros de sus amiguitos en frente de ustedes. Síganme en una línea como un tren.

2.2 Now I am going to tell you what to do, and the names of some of the things in this room in English. Pay attention and repeat the names after I say them.

Ahora yo les voy a decir en inglés que hacer y los nombres de algunas cosas que hay en este cuarto. Pongan atención y repitan los nombres después yo los diga.

Now we know the names of some things in our class.

Ahora ya sabemos los nombres de algunas cosas que hay en nuestra clase.

DAY 1 - Concepts: Everything in the world has a name; Everybody has a name.

Language:

Naming; Pattern 1, 10 sentences.

2.1 Caminemos al rededor del cuarto. Hagan Uds. lo que yo hago. Corran despacio. Corran ligero. Caminen despacio. ¡Paren! Miren hacía arriba. Miren hacía abajo. Siéntense. Párense. ¡Brinquen!

2.2 This is a chalkboard. (R) (Touch the chalkboard.)
This is a door. (R) (Touch the door.)
...closet...
...drinking fountain...
...table...
...chair...
...flannelboard...
...bulletin board...
...window...
...wall...

Corran despacio. Marchen levantando las piernas. Saquen el pecho. Levanten su cabeza. ¡Párense! ¡Sientense!

DAY 1 (continued)

BREAK

2.3 Everything in the world has a name. All the people in the world have a name too. Let's name the people in our class.

Todas las cosas en el mundo tienen su nombre. Todas las personas en el mundo también tienen su nombre. Nombremos las personas en esta clase.

We have a little time before we go. Look at these cards. This is..........

Tenemos un poquito de tiempo antes de irnos. Miren a estos cartelones. Este es..........

Now we know the names of our friends in the class, and the things in our room. Tomorrow we'll learn more. You did a very good job today.

Ahora sabemos los nombres de nuestros amiguitos y de las cosas que hay en la clase. Mañana aprenderemos algo nuevo. Hoy ustedes se portaron muy bien.

DAY 1 - Directions (continued)

BREAK

2.3 I am Mrs. ____________ (tap chest).

(Raise child's hand and tap chest. Say, "I am José." Repeat with the child. Have him repeat if willing. Do with all.)

(In center of circle) I am Mrs. Rodriguez. Quiero que cada uno dé un paso al frente y nos diga su nombre. "Who am I? I am Mrs. Rodriguez." "Who are you?" (points to one) "I am ____________." (Repeat with them. Go around the circle.)

NOTE:

Pictures of all children in the class are taken on Day 1. When developed they will be used to teach the concept that a picture of an object or person has the same name as that object or person on Day 3 and thereafter.

DAY 2

1.0 Let's play follow the leader like we did yesterday. Form a line.

Juguemos otra vez a lo que hicimos ayer. Formen una línea.

2.0 Take the hand of your friend in front and your friend in back. Now let's see if we can remember the names of the things in the room.

Tomen las manos de su amigo de en frente, y del de atrás. Hagan lo que yo hago. Vamos a ver si podemos recordar los nombres de las cosas que hay en este cuarto.

Did you remember the names?

¿Recuerdan ustedes los nombres?

2.1 Do all of us in the class have names? Yes, all of the people in the world have names.

¿Todos nosotros tenemos nombres? Sí, todas las personas en el mundo tienen su nombre.

Let's say our names when I point to you.

Digamos nuestros nombres cuando se nos pregunte.

BREAK

2.2 Remember that all of the things in the world have their name?

¿Recuerdan ustedes que todas las cosas en el mundo tienen su nombre?

Can you name these things (objects)?

¿Pueden ustedes nombrar estas cosas (objetos)?

DAY 2 - Concepts: Review - everything and everybody has a name; Pictures of objects have the same names as the objects.

Language:

Naming; Pattern 1, 10 sentences.

1.0 Walk slowly. Walk fast. Run slowly. Run fast. Stop. Reach up. Reach down. Stand up. Turn around.

2.0 Run around the table. Run around the chair. Run to the door. Touch the window. Walk to the bulletin board. Sit down on the floor. Stand up. Walk slowly. Run slowly. Walk fast. Sit on the chair. Stand up. Walk slowly. Sit down.

2.1 (yes)

(yes)

I am Mrs. Rodriguez. Who are you?
I am __________ (repeat with each student.)

BREAK

2.2 (Review pattern 10 using objects found in or brought to classroom (apple, fork, crayon, balloon).)

DAY 2 (continued)

3.0 Here are some pictures of these things. Can you name these pictures?

Aquí están algunos cuadros de estos objetos. ¿Pueden ustedes nombrar estos cuadros?

Are the names of the pictures and of the things the same?

¿Los nombres de los cuadros y de las cosas son los mismos?

Let's repeat the names of the things of these cards. This is....

Repitamos los nombres de las cosas que hay en las tarjetas. Este es....

Now we know that things and pictures of those things have the same names.

Ahora sabemos que las cosas y sus cuadros tienen el mismo nombre.

4.0 Look around your house when you are at home, and try to find the names of some things in English.

Cuando estén en sus casas, miren alrededor y traten de encontrar los nombres de algunas cosas en inglés.

DAY 2 - Directions (continued)

3.0 (Then use the cards from the Lancaster*program for the same objects):

apple - 105
fork - 225
crayon - 6
balloon - 22

(yes)

other cards:
f --- 196, 19
v --- valentine
p --- 47, 187
ch --- 185
school - 49

* Lancaster, Louise, *Introducing English*, Houghton-Mifflin 1966

DAY 3

1.0 Form a line here in front of me, and follow me around the room. Do what I do.

Formen una línea aquí; síganme alrededor del cuarto, y hagan lo que yo hago.

2.0 Many things in the world have a sound or make a sound.

Muchas cosas en el mundo tienen su sonido.

When we talk, we make sounds, and many animals make sounds.

Cuando hablamos, hacemos sonidos, y algunos animales también hacen sonidos.

What is this? (Show picture of a cat.)

¿Qué es esto?

2.1 I have another cat here. When it is happy, it makes a sound: Meow, Meow.

Yo tengo otro gato. Cuando está contento, hace un sonido: Miau, Miau.

When it is angry, it makes this kind of sound: f-f-f-f-f

Cuando está enojado, hace este sonido: f-f-f-f-f

Everyone say than. Everyone be an angry kitty.

Todos díganlo. Hagan el sonido del gatito enojado.

2.2 Put your hands in front of your mouth like this.

Pongan sus manos en frente de su boca, así.

Make the sound of an angry kitty.

Hagan el sonido del gatito enojado.

Can you feel the air come out of your mouth?

¿Pueden sentir el aire que sale de sus bocas?

Let's all remember the sound an angry kitty makes. What is it?

DAY 3 - Concepts: Review of names; Pictures of people have same names as people; Prepositional relationships: up, down, over, under.

Language:

Prepositional relationships; Pattern 10 sentences; Interrogative and negative transformations.

1.0 Run fast. Run slowly. Stand still. Walk slowly, walk fast. Johnny, run slowly to the table. Gloria, walk to the door. Everyone, sit down. Wiggle your fingers. Touch your nose. Clap your hands. Shake your hands. Nod your head. Look up. Look down. Reach up. Reach down. Put your hand over your head. Put your hand under your chin. Put your elbow up. Put your hand over your friend's head.

2.0 (a cat)

2.1

f-f-f-f-f-f

f-f-f-f-f-f

2.2 f-f-f-f-f-f

DAY 3 (continued)

Recordemos el sonido que hace un gato cuando está enojado. ¿Cual es ese sonido?

BREAK

2.3 Who remembers the sound an angry kitty makes?

¿Quién recuerda el sonido que hace un gatito enojado?

3.0 Here are the pictures we took of each of you the first day.

Aquí tenemos las fotos que tomamos de ustedes el primer día.

Remember that things and the pictures of the things have the same names. People and their pictures have the same names too.

Recuerden que las cosas y sus cuadros tienen el mismo nombre. Las personas y sus retratos también tienen el mismo nombre.

BREAK

2.3 Use cards from Lancaster program:
Cards with f sounds - 196, 19, 225, flag, feathers.
Use any other objects whose name contains f sound that are available.

3.0 Review names: "I am ________." "Who are you?" Point to a student and go around the room.

Here hold up pictures taken earlier of the children. "Who is this?" "This is ________." (R) Continue for each. "Is this Maria?" "No, this is ________."

DAY 4

1.0 Remember that yesterday we talked about sounds. We learned the sound of the angry kitten. What does the angry kitten say?

Recuerden que ayer hablamos de los sonidos. Aprendimos el sonido del gatito enojado. ¿Qué dice el gatito enojado?

Today, we're going to make air come from our mouths in a different way.

Hoy vamos a producir aire de nuestra boca en un modo diferente.

1.1 Here we have some pictures whose names use the sound "P". Repeat them for me.

Aquí tenemos unos cartelones. Los nombres de las figuras usan el sonido "P". Repítanme.

1.2 Now we are going to sing a song using the sound "P" (Pop Goes the Weasel).

Ahora vamos a cantar una cancion que tiene el sonido "P".

2.0 These are pictures of the boys and girls in our class. Let's name them.

Estos son retratos de nuestros amiguitos, las muchachas y los muchachos. Nombrémoslos ahora.

2.1 Children, pin your pictures under the figure of the boy or girl.

Niños, cuelguen sus retratos con un alfiler debajo de los retratos grandes del muchacho o de la muchacha.

2.2 Form a line. Today I want the boys and girls to do different things. Listen well.

Formen una línea. Hoy quiero que los muchachos y las muchachas hagan unas cosas diferentes. Escúchenme bién.

BREAK

DAY 4 - Concepts: Review prepositional relationships: up, down, over, under; Classification by sound, by sex (boy-girl).

Language:

Prepositional relationships; P sound; Classification

1.0 f-f-f-f-f-f

1.1 (Use picture cards from Lancaster program: pie--154, pan--226, pear--198, pig--187, parachute--242.)

1.2 (Sing first verse of "Pop Goes the Weasel" 2 or 3 times.) (Have flannelboard with a picture of a girl on one side and of a boy on the other side.)

2.0 Who is this? This is Jim. Jim is a boy. This is Mary. Mary is a girl. John is a boy. Jim and John are boys. Gloria is a girl. Mary and Gloria are girls. Is Betty a boy?

2.1 Betty, put your picture under the girl on the flannelboard.

2.2 Boys, sit over here; girls sit over there. Boys, sit under the tables; girls, sit on chairs. Boys, sit under the windows; girls put your hands over the table. Under the table. Boys, stand under the lamp.

BREAK

DAY 4 (continued)

3.0 Now raise your hand when I say a word that is different from the rest.

Ahora levanten su mano cuando diga una palabra diferente de las otras.

3.1 Now we are going to play a game with sound. Listen carefully, and raise your hands when I make a sound that is different from the rest.

Ahora vamos a jugar un juego. Póngase listos y levanten sus manos cuando hago un sonido el cual es diferente de los demás.

4.0 Here is a pinwheel for each of you.

Estos rehiletes son para ustedes.

Make your pinwheel move by saying "puh, puh, puh."

Los vamos a mover con el aire de nuestra boca. Pónganlo cerca de su boca y digan "puh, puh, puh."

DAY 4 - Directions (continued)

3.0 fish-fish-fish-cat
pencil-pencil-pen-pencil
man-man-man-man-pen
ball-bat-ball-ball-ball

3.1 (Use xylophone or piano for a series of five notes, one obviously different from the rest.)

4.0 (Name each child as he gets pinwheel. Practice P sound by blowing air explosively so as to turn pinwheel.)

DAY 5

1.0 Who can show me which is a picture of an airplane?

¿Quién puede mostrarme cual cartelón tiene el aeroplano?

What is this? An airplane.

¿Qué es esto? Sí, es un aeroplano.

1.1 When it flies it says v-v-v-v-v-v-v.

Cuando un avión vuela hace este sonido, v-v-v-v-v-v-v.

See how I put my teeth on my lip to make the airplane sound. v-v-v-v-v-v-v

Miren como pongo mis dientes en mi labio para hacer este sonido como un avion. v-v-v-v-v-v-v

Now you do it.

Háganlo ustedes.

1.2 Here is a poem about the airplane sound. Listen!

Aquí está un poema del sonido del aeroplano. ¡Escuchenme!

Now, repeat it please.

Ahora, repitan, por favor.

1.3 Make your airplanes fly around the room saying v-v-v-v-v.

Vuelen sus aviones alrededor del cuarto haciendo el sonido v-v-v-v-v-v.

2.0 Form a line here in front of me.

Formen una línea aquí en frente de mí.

BREAK

3.0 Let's talk about ourselves.

Hablemos de nosotros mismos.

DAY 5 - Concepts: Review prepositional relationships; Review classification by sex.

Language:

Directions; V sound; Classification; Pattern 10 sentences and transformations.

1.0 (Have pictures of airplanes, apple, forks, chick. Have mirrors on tables in front of the chairs.)

(Show a paper airplane. Expect response from the children.)

1.1 (Demonstrate V sound.)

(Use small hand mirrors, one for each child. Have child see proper lip and teeth placement.)

1.2 Airplane, airplane in the sky.
v------v------v------v-------
Flying, flying up so high.*
v------v------v------v-------

2.0 Walk around the room; give directions: run, walk, fast, slow, over, under, touch......chalkboard, table, etc... look up, look up at the light, look at the ceiling, look at the wall, touch the door, look out the window. on......in......

BREAK

3.0 This is Betty. She is a girl. Betty is a girl. Is Betty a girl? Is she a boy?

This is John. He is a boy. John is a boy. Is John a boy?

DAY 5 (continued)

3.1 Now listen carefully.

Escúchenme bien.

Repeat, please.

Repitan, por favor.

DAY 5 - Directions (continued)

3.1 Are Mary and Gloria girls or boys? They are girls.
Are John and Jim girls or boys? They are boys.

Betty and John are children.
Mary and Gloria are children.
John and Jim are children.
John and Mary are children.

Boys stand up. Girls stand up.
Children stand up.

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* Flood, Lily Chinn, Teaching English as a Foreign Language to Head Starters, Economic Opportunity Commission of Santa Clara County, California, 1966, Page 12

DAY 6

1.0 Do what I do, please.

Hagan lo qui yo hago, por favor.

Everyone stop around this circle of chalk.

Quiero que se paren alrededor de este círculo de yeso.

Everything in the world has a place. Everything is someplace.

Todas las cosas en el mundo tienen su lugar. Cada cosa tiene su lugar.

1.1 When we talk about things, we have words that tell where things are.

Cuando hablamos de cosas, usamos palabras que indican donde están las cosas.

1.2 Now we are going to sing a song.

Ahora vamos a cantar. Canten conmigo.

BREAK

2.0 Everything in the world has a color. Colors have names.

Todas las cosas en el mundo tienen su color. Los colores tienen nombres también.

2.1 There are many colors in the world. Look at all the colors of the sunlight.

Hay muchos colores en el mundo. Miren a todos los colores de la luz del sol.

2.2 These balls and boxes also have their colors.

Estas pelotas y cajas también tienen sus colores.

Show me the red__________. Show me the blue__________.
Muéstrame la__________roja. Muéstrame la__________azul.

2.3 Now, I am going to call on you to pick the ball or box with the color I name.

Ahora, quiero que cada uno recoja la pelota o la caja que tiene el color que yo diga.

DAY 6 - Concepts: Things have location in space; Prepositional relationships: in-out; Things have color.

Language:

Directions: Prepositional relationships: in-out; Colors; Pattern 9 sentences.

1.0 Run slowly. Look up, look down. Hands over head, under chin....

1.1 (Draw a chalk circle on the floor.) Everyone, put your foot in the circle. Where is your foot? Your foot is in the circle. Where is my foot? My foot is in the circle. Take your foot out of the circle. Where is my foot? My foot is in the circle. Where is your foot? Your foot is out of the circle.

(Use a large packing box.) Betty, walk in the box. Where is Betty? Betty is in the box. Walk out of the box, Betty. Where is Betty? Betty is out of the box.

1.2 Sing "Looby Loo," ("Loopety-Loo").

BREAK

2.1 (Use a prism, and let all the children see the sunshine and the rainbow colors.)

2.2 (Use a red and a blue box.) What is this? This is a ball. This is a red ball. This is a blue ball. What is this? This is a box. What color is the box? This is a red box. This is a blue box.

Put the red ball in the red box. Put the blue ball in the blue box. Now put the red ball in the blue box. The red ball and the blue ball are in the blue box. There are no balls in the red box. Now put the red ball in the blue box.

(Have several colored toys on hand.) Johnny, pick the red box....

2.3 (Have the red and blue boxes and balls on the floor in the middle of the chalk circle.)

DAY 7

Come in and sit down on the floor.

Entren y siéntense en el piso.

1.0 Remember that everything in the world has a color.

Recuerden que todo en el mundo tiene su color.

1.1 What color is this? (Have toys, red and blue, ready to hold up.)

¿De qué color es esto?

And what color is this? (another toy)

¿Y de qué color es este?

What is this? This ______ is what color?

¿Qué es este? Este ______ ¿de qué color es?

1.2 Now, listen carefully and do what I do.

Ahora escúchenme bien, y hagan lo que yo hago.

2.0 Remember that many things in the world have a sound.

Recuerden que muchas cosas en el mundo tienen su sonido.

Let's make some of the sounds that we have talked about.

Vamos a hacer algunos de los sonidos de que hemos hablado.

What is this?

¿Qué es este?

BREAK

3.0 What is this? What color is it? And this?

¿Qué es esto? ¿De qué color es? ¿Y este?

We are going to use these balloons to learn another new sound.

Vamos a usar estos globos para aprender un sonido nuevo.

DAY 7 - Concepts: Classification by color; Review of prepositional relationships: in-out.

Language:

Colors; B sound (contrasted with v-sound); Pattern 9 sentences.

1.1 (Use red and blue toys first. Then introduce yellow.)

(Move from pattern 10 to pattern 9): This is a ball. This ball is red.

1.2 (Have several boxes and toys to use in showing prepositional relationships: in-out): Put the blue ball in the blue box. The blue ball is in the blue box.

2.0 (Use cards to review f, v, p sounds--see previous lessons.)

BREAK

3.0 (Have red and blue balloons.) Children answer: "This is a balloon." "This balloon is red."

DAY 7 (continued)

3.1 When fish talk, they make sounds too.

Cuando los pescados hablan, también hacen sus sonidos.

When this fish talks, it says "bub, bub, bub."

Este pescado dice "bub, bub, bub."

You say it now. Put your lips against the balloon like this and say "bub, bub, bub."

Díganlo ahora. Pongan sus labios cerca de sus globos y digan "bub, bub, bub."

3.2 Now listen very carefully and say what I say.

Ahora, pongan atención, y óiganme cuidadosamente.

Listen carefully for the difference in the sounds at the beginning of these words.

Escuchen cuidadosamente la diferencia en los primeros sonidos de estas palabras.

Can you hear the "bub, bub, bub" sound and the v-v-v-v-v sound?

¿Pueden oír el "bub, bub, bub" y el v-v-v-v-v?

DAY 7 - Directions (continued)

3.1 (Show a picture of a fish.)

3.2 (Use minimal pairs for b and v):

bat - vat
lib - live
cabs - calves
bane - vane
bend - vend
bent - vent
lobes - loaves
by - vie

boat - vote
saber - saver
bet - vet
bale - veil
robe - rove
berry - very
base - vase

DAY 8

1.0 Remember that everything has a color. Let's name the colors of some things.

Recuerden que cada cosa tiene su color. Nombremos los de algunas cosas.

1.1 Let's talk about the colors of these things.

Hablemos de los colores de estas cosas.

1.2 Now I want you to do some things with these colored balls.

Ahora quiero que Uds. hagan algunas cosas con estas pelotas de color.

Put all the red balls on this side.

Pongan todas las pelotas rojas--de este lado.

Now, put all the yellow balls here.

Ahora pongan todas las pelotas amarillas aquí.

Now, put all the blue balls on this side.

Ahora pongan todas las pelotas azules de este lado.

BREAK

2.0 Now let's talk about what people do.

Ahora hablemos de las cosas que hace la gente.

Let's ask Johnny to do something.

Preguntémosle a Juanito que haga algo.

2.1 Listen to the way we talk about what people do.

Escuchen al modo como nosotros hablamos de lo que hace la gente.

Listen to the sound at the end of the word: "Pushes"

Escuchen al sonido al fin de la palabra "Pushes".

DAY 8 - Concepts: Review classification by color.

Language:

Pattern 9 sentences; Color; -s form of the third person singular verbs.

1.1 (Review colors of balls: Red, blue, yellow. Use pattern 9, the interrogative and negative transformations):

What is this? This is a ball.
What color is this ball? This ball is red.
Is this ball blue? No, this ball is red. This ball is not blue. This is a red ball.

1.2 (Use flannel board with two or three of each big, little, red, blue, and yellow balls. Use small individual flannel boards for each child as well.)

(For the class demonstration, repeat to the class): "Johnny, put the red balls on this side." "Johnny puts the red balls on this side."

(Repeat with the blue and yellow balls.)

BREAK

2.0 Johnny, push the chair.

2.1 Johnny pushes the chair. (R)

Johnny pushes the chair. (R)

DAY 8 (continued)

Let's all watch while Johnny pushes the chair.

Pongamos atención mientras Juanito empuja la silla.

Listen to the sound at the end of the word: "Pushes".

Escuchen al sonido al fin de la palabra "Pushes".

Let's everyone repeat: "What does John do?"

Repitamos todos: ¿Qué hace Juán?

Listen to the sound at the end of the word: "Pushes".

Escuchen al sonido al fin de la palabra "Pushes".

2.2 We are going to play a game. I will whisper to one of you.

Vamos a jugar un juego. Hablaré en secreto a uno de ustedes.

I will tell him something to do.

Le diré algo que hacer.

You all guess what he does and tell us.

Todos adivinen que es lo que hace, y díganoslo.

DAY 8 - Directions (continued)

(Repeat for each child, and for other activities, stressing the s or es ending.)

2.2 (This is a game. Divide into two teams; whisper direction to one member of one team, other team guesses what he does.)

DAY 9

1.0 Everything has a size, and we talk about size in many ways.

Todas las cosas tienen su tamaño, y nosotros hablamos de ese tamaño de varias maneras.

1.1 Look at the flannel board.

Miren al tablero de franela.

1.2 Now I want you to put all the big balls on this side.

Ahora quiero que Uds. pongan las pelotas grandes en este lado.

1.3 Let's look at this big ball.

Miremos a esta pelota grande.

Let's look at this little ball.

Miremos a esta pelota pequeña (chica).

BREAK

2.0 Many things in the world have a sound or make a sound.

Muchas cosas en el mundo tienen su sonido (hacen un sonido).

Do you remember the angry kitty sound?

¿Recuerdan Uds. el sonido del gatito enojado?

What is the pinwheel sound?

¿Cuál es el sonido del rehilete?

What sound does the fish make?

¿Qué sonido hace el pescado?

What sound does the airplane make?

¿Qué sonido hace el aeroplano (avión)?

DAY 9 - Concepts: Classification by size:
big-little; Prepositional relationships:
on-off.

Language:

Size; K sound; Prepositional relationships:
on-off.

1.1 (Have balls colored red, blue, yellow, both big and little ones.)

What is this? (Point to a big red ball.) This is a red ball.

What is this? (Point to a little red ball.) This is a red ball.

This is a big ball. (Point to one big red ball.) What is this? (Point to another big red ball.) This is a big ball.

This is not a big ball. (Point to a little red ball.) Is this a big ball? (Point to another little red ball.) No, this is not a big ball.

1.2 (Have students put big balls on one side, little balls on the other.)

1.3 What color is this little ball? This little ball is yellow. This is a little yellow ball.

BREAK

DAY 9 (continued)

2.1 Today we will make the sound a crow makes.

Hoy vamos a hacer el sonido que hace un cuervo.

What is a crow?

¿Qué es un cuervo?

Here is a picture of a crow.

Aquí está una fotografía de un cuervo.

2.2 A crow says "kaw, kaw, kaw".

Un cuervo dice "kaw, kaw, kaw".

Let's look at these pictures and see if we can make the sound a crow makes.

Miremos a estas fotografías y veamos si podemos hacer el sonido que hace un cuervo.

Can you hear the crow sound?

¿Pueden Uds. oir el sonido del cuervo?

2.3 Let's be crows.

Juguemos como que somos cuervos.

Crows sit on fences.

Los cuervos se paran en las cercas.

This is a fence.

Aquí está la cerca.

Listen to the poem and say it with me.

Escuchen el poema y díganlo conmigo.

DAY 9 - Directions (continued)

2.1 (Have card #92--Lancaster program--crow, or another picture of a crow.)

2.2 (Use the following cards showing objects starting with K sound.)

Clothes: 277,71; Cookies: 109; Coat: 69;
Cake: 106; Corn: 108; Cat: 2.

2.3 Poem: * Two black crows sat on a fence
Kaw, kaw, kaw
Flapped their wings and both flew off,
Kaw, kaw, kaw

(Then change the number to the number of students in the class. Each time the poem is repeated, one flies off. Emphasize the on and off as well as the K sound.)

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* Lily Chinn Flood, P. 12

DAY 10

1.0 Remember that everything in the world has a size. We talk about size in many ways.

Recuerden que todo en el mundo tiene su tamaño, y que hablamos de ese tamaño de varios modos.

1.1 Let's look at some big things and some little things in our room. Everyone take hands and follow me.

Miremos por algunas cosas grandes y algunas cosas pequeñas en nuestro cuarto. Tómense todos de la mano y síganme.

These are some little things.

Estas son algunas cosas pequeñas.

These are some big things.

Estas son algunas cosas grandes.

1.2 Let's look at the chairs.

Miremos a las sillas.

BREAK

2.0 Now let's talk about what people do.

Ahora hablemos de las cosas que hace la gente.

Let's ask Johnny to do something.

Preguntémosle a Juanito que haga algo.

2.1 Listen to the way we talk about what people do.

Escuchen del modo como nosotros hablamos de lo que la gente hace.

Let's all watch while Johnny pushes the chair.

Pongamos atención mientras Juanito empuja la silla.

Let's everyone repeat: "What does John do?"

Repitamos todos: ¿Qué hace Juán?

DAY 10 - Concepts: Review classification by size: big-little; Comparison by size: big, bigger, biggest.

Language:

Review classification by size; Comparison by size; Pattern 4 sentences; Review 3rd person singular of verbs.

1.0

flower
tack
pin
needle
boxes

balls (3)
boxes (3)
bookcase
chairs (3)
desk

1.1 (Display of "little things" and "big things".) (Walk around little things collected or constructed of paper. Then walk around big things.)

1.2 (Have 3 chairs of varying sizes standing on a large piece of paper. Pull 2 chairs off paper.) Which chair is bigger? (Separate larger chair.) This chair is bigger. (R) (Pull last chair off paper.) Which chair is bigger? (Separate larger chair of remaining 2.) This chair is bigger. (R)

(Put all 3 together) big, bigger, biggest.
This chair is big.
This chair is bigger.
This chair is biggest.

Repeat with boxes, balls.

BREAK

2.1 Pattern 4 (N Vt N)

Describe what children do, eg.:

Johnny pushes the chair.
Mary carries the chalk.
Joe eats the cookie.

(Also use appropriate cards - Lancaster).

DAY 10 (continued)

2.2 We are going to play a game. I will whisper to one of you. I will tell him something to do. You all guess what he does and tell us.

Vamos a jugar un juego. Hablaré en secreto a uno de Uds. Le diré que haga algo. Todos adivinen que es, y nos lo dirán.

DAY 11

1.0 Remember that everything in the world has a name.

Recuerden que cada cosa en el mundo tiene su nombre.

1.1 Now we are going to talk about ourselves. Let's learn the names of the parts of our body.

Ahora vamos a hablar de nosotros. Aprendamos los nombres de las partes de nuestro cuerpo.

1.2 Let's play a game. I'll choose a leader, and he will give directions. ________________, you be the leader.

Juguemos un juego. Yo escogeré un guía (director) y el nos dará las direcciones. ________________ danos las direcciones.

2.0 We are going to play another game now.

Ahora jugaremos otro juego.

2.1 I want the ______________.
Quiero (el, la)____________.

Find the ________________.
Busquen (el, la) _________.

Touch the _______________.
Toquen (el, la)____________.

BREAK

3.0 We know that everything in the world has a name, and we know that everything in the world has a color.

Sabemos que todas las cosas en el mundo tienen su nombre, y también sabemos-que todas las cosas en el mundo tienen su color.

3.1 Let's talk about some things that are here.

Vamos a hablar de algunas de estas cosas que están aquí.

3.2 Now do what I do, and repeat what I say.

Ahora hagan lo que yo hago y repitan lo que yo digo.

DAY 11 - Concepts: Parts of self; Same vs. different; Review of color.

Language:

Body parts; Pattern 4 and 5 sentences; Review of color.

1.1 This is your head...ears...hair...eyes...nose...mouth... chin...neck...shoulders...arms...elbows...hips... knees...ankles...

1.2 Touch your head...neck...shoulders

2.1 (Have children point to appropriate body parts as named.)

BREAK

3.0 (Pass out to each child a set of dixie cups (in red, blue, yellow, and green), a set of plastic cars, and sheets of construction paper in the above colors, four crayons. Hand out objects item by item, emphasizing color.) (Give it to the child, have him repeat after you) "This is a red car."

3.1 (Hold up an item): I have a _____. (Have them repeat.)

3.2 I put the blue car in the box. I put the red car in the box. I put the green paper on the box. I put the box on the red paper.

Is yours the same as mine? How is it different? Can you make it the same?

DAY 11 (continued)

3.3 Now I am going to ask you to do somethings with these objects I gave you.

Ahora quiero que hagan algo con los objetos que les dí.

After you do it, I want you to tell me what you did.

Después que lo hagan, quiero que me digan lo que hicieron.

DAY 11 - Directions (continued)

3.3 Put the blue car in the box. What did you do? I put the blue car in the box.

Give the red paper to ________. What are you doing? I give the red paper to ________. (Later, "I give the red paper to him.")

DAY 12

1.0 Today we are going to learn about another sound which we use when we talk. There is an animal which makes this sound. It is the snake.

Hoy vamos a aprender otro sonido que usamos cuando hablamos. Es el sonido que hacen las culebras.

1.1 Here is some clay for you. I have made a snake of this clay.

Aquí está un poco de barro. Yo he hecho una culebra de barro.

You make one too. Can you make a snake?

Uds. hagan una también. ¿Pueden hacer una culebrita?

1.2 What sound does a snake make?

¿Qué sonido hace la culebrita?

Make your snake say S-s-s-s-s-s-s.

Hagan que sus culebritas digan S-s-s-s-s-s-s.

1.3 Here are some cards with words which begin with the snake sound.

Aquí están unas cartas con palabras que comienzan con el sonido que hacen las culebritas.

Can you hear the snake sound at the beginning of these words?

¿Pueden oír el sonido que hace la culebrita al princípio de estas palabras?

BREAK

2.0 Let's look at the boxes which I gave you yesterday. We are going to talk about the sizes and colors of the things there.

Miremos a las cajas que les dí ayer. Vamos a hablar de los tamaños y los colores de esas cosas que están allí.

DAY 12: Concepts: Review of color and size
Language:
S-Sound; Directions with color and size.

1.2 S-s-s-s-s-s-s (sound as they make and play with clay snakes.)

1.3 Lancaster cards:

scissors - 44
slide - 28
seal - 178
sink - 205
shirt - 73
spoon - 229
sweater - 76
swing - 30

BREAK

2.0 (Have boxes with dixie cups, cars, crayons, and construction paper ready. Have ready the flannelboard with the paper balls. Have the balls and boxes on a table. Have large boxes on the floor, and several sizes of chairs ready.)

DAY 12 (continued)

2.1 Now, do what I do, and repeat what I say.

Ahora hagan lo que yo hago y repitan lo que yo digo.

2.2 Now I am going to ask you to tell me what you do.

Ahora les voy a preguntar que me digan lo que están haciendo.

Listen to the directions, so that you can tell me what you do.

Pongan atención a las direcciones para que me puedan decir lo que están haciendo.

DAY 12 - Directions (continued)

2.1 What is this? What color is this (crayon)?
This is a red crayon. This crayon is red.

I put the red crayon in the box.

This is a blue car. This car is blue. I put the blue car on the blue paper.

2.2 (Have a desk, flannelboard, and floor set up.)

(Desks: Boxes with objects
Flannelboard: Balls of colors and sizes
Floor: Big boxes, chairs, tables)

I have a blue cup. I want a green cup. Who has a green cup? Gloria, do you have a green cup? Which cup is it? This is the green cup.

DAY 13

1.0 When we talk, we use words. Some of these words tell how we look and feel.

Cuando hablamos, usamos palabras. Algunas de estas palabras nos dicen como somos y como sentimos.

1.1 Let's look at these cards to find some of these words.

Vamos a ver estas tarjetas para encontrar algunas de estas palabras.

1.2 Now I am going to ask you to find the __________ boy.

Hoy les voy a preguntar que encuentren (busquen) el niño __________.

Johnny, can you find the smiling boy?

Juanito, ¿puedes encontrar al niño que se está riendo?

BREAK

2.0 Form a line and put your hand on the shoulders of the person in front of you, like a train.

Formen una línea y pongan sus manos en frente como coches del tren.

The train makes a special sound. It goes "chu, chu, chu." Let's all be a train, and make the sound a train makes.

El tren hace un sonido especial. Hace chu, chu, chu. Pretendamos que somos un tren y hagamos el sonido del tren.

2.1 Everyone sit down at the tables. Let's look at some cards with the "ch" sound that the train makes.

Siéntense al rededor de las mesas, Miren a las cartas con el sonido "ch" que es igual o idéntico al sonido que hace el tren.

DAY 13 - Concepts: Qualitative relationships - feelings; Review of size.

Language:

Review of pattern 9; Ch-sound.

1.1 (Lancaster Cards):

warm - 31
cold - 32
sleepy - 33
sick - 34
hungry - 35
thirsty - 36
happy - 37
quiet - 38
funny - 39
busy - 40

This is a boy. This boy is happy...sad...dirty... clean...crying...smiling...sick...well...tired... sleepy...hungry...thirsty...

1.2 (Same cards as above.)

BREAK

2.1 (Ch sound - cards):

chair - 19
cheese - 102
cherry - 97
chicken - 185
children - 67

DAY 13 (continued)

3.0 Remember that everything in the world has a size. Here are some pictures with things of different sizes. Look at your paper.

Recuerden que todas las cosas en el mundo tienen su tamaño. Aquí están unas fotos con cosas de varios tamaños. Miren a sus fotos.

Look at the first row. Can you tell me which is the little boat?

Busquen en la primera línea y díganme cuál es la lancha pequeña (lanchita).

Now pick up your blue crayon. Draw a circle around the little boat.

Recojan sus crayones azules y dibujen un círculo alrededor de la lancha pequeña.

DAY 13 - Directions (continued)

3.0 (Use dittos from Lancaster program, showing objects of various sizes.)

DAY 14

1.0 We have learned that many things in the world have a sound or make a sound. I'll make a sound. Now you make your favorite sound.

Hemos aprendido que muchas cosas en el mundo tienen un sonido. Yo voy a hacer un sonido. Ahora ustedes hagan su sonido favorito.

When there is too much noise in the room we say Sh-sh-sh.

Cuando hay demasiado sonido o ruido en el cuarto decimos Sh-sh-sh.

1.1 Look at these cards.

Miren a estas cartas.

There are many words in English that begin with Sh.

En inglés hay muchas palabras que comienzan con el sonido Sh.

BREAK

2.0 Yesterday we talked about words that tell how we look and feel.

Ayer hablamos de palabras que nos dicen como nos sentimos.

2.1 Let's see if we remember these words.

Vamos a ver si nos recordamos de esas palabras.

2.2 Now I'm going to name a feeling. You show me the card with the picture of that feeling.

Voy a nombrar palabras que expresan sensaciones. Quiero que ustedes me enseñen cuales cartas demuestran esas sensaciones.

2.3 Repeat the words we have talked about that tell about how we look and feel.

Repitan las palabras que acabamos de aprender y díganme como se sienten.

Now you show me how you feel.

Ahora enséñenme como se sienten.

DAY 14 - Concepts: Review qualitative relationships-feelings.

Language:

Sh-sound; Pattern 9 sentences

1.0 (Go around room letting each child make his favorite sound.)

1.1 (Lancaster Cards: shirt-70 (275); shoes-68; shovel-298; shelf-232.)
Other word: shine, ship, shout, shadow, shop, share

BREAK

2.1 (Use cards with feelings, same as previous day.)
"This is a _____ (boy, girl). He is happy."

warm - 51
cold - 32
sleepy - 33
sick - 34
hungry - 35
thirsty - 36
happy - 37
quiet - 38
funny - 39
busy - 40

2.2 (Have cards on display so that the children can walk to them and point.)
Show me the _____. That is _____. How does he feel?
He feels _____.

2.3 (List the kinds of feelings talked about to impress the category "feeling".)

DAY 15

1.0 Children, remember that everything in the world has a color.

Niños, recuerden que todas las cosas en el mundo tienen su color.

We see colors. Look around, can you see all the colors?

Miren al rededor de ustedes, ¿pueden ver todos los colores?

Things we eat are many colors.

Las cosas que comemos tienen muchos colores.

1.1 Today we are going to make things to eat that have different colors.

Hoy vamos a preparar cosas para comer que tienen diferentes colores.

We are going to make jello of different colors.

Vamos a preparar gelatina de colores diferentes.

I want to make __________ jello.

Quiero hacer gelatina __________.

Which box of jello do I need?

¿Cual caja de gelatina necesito?

BREAK

1.2 Now we are going to drink our jello.

Ahora vamos a tomar nuestra gelatina.

What color jello do you want, __________?

__________, ¿Qué color de gelatina quieres?

Good, now show me that color.

Muy bién, ahora, enséñame ese color.

DAY 15 - Concepts: Review of Color
Language: Review of Color

1.1 (Have boxes of red, yellow, and green jello (make some blue if you can), ice, and a means of boiling water on hand. Also, small dixie cups for each child, and 2-cup bowls.)

This box has green jello (R). The jello is ______ (R).
What color is the jello? The jello is ______. (R)
We want the green jello. We want this box. (R)

(Continue with red and yellow. Emphasize the correct pronunciation of "yellow". The word for "ice" is pronounced almost exactly like "yellow" - "hielo".) Minimal pairs: yale-jail; yoke-joke; yack-jack; yellow-jello.

BREAK

1.2 (After the break, eat jello or serve the jello liquid to drink.)

"I want green jello."
"This jello is green."

(Continue with red, yellow, and blue if available.)

DAY 15 (continued)

1.3 Now show me the __________ box.

Ahora enséñame la caja __________.

What color is the box?

¿De qué color es la caja?

DAY 15 - Directions (continued)

1.3 (Have balls, circles, boxes and toys on hand in the colors of the jello.)

The box is _____.

The circle is _____. Etc.

DAY 16

1.0 Do you remember the sound of the choo-choo train?

¿Se recuerdan del sonido del chu-chu tren?

Can you remember the "sh" sound we make when we don't want noise in the room?

¿Se recuerdan del sonido "sh" que hacemos cuando no queremos ruido en el cuarto?

1.1 Repeat these words after me. Listen carefully to the words.

Repitan estas palabras después que yo las diga. Escuchen muy bién las palabras.

2.0 Now we are going to talk about "more than one".

Ahora vamos a hablar de más de una cosa.

2.1 Let's look at these cards.

Veamos a estas cartas.

This is one ________. Here is more than one ________. These are two (or three) ________.

Este es un (una) ________. Y aquí tenemos más de un (una) ________. Aquí tenemos dos (o tres) ________.

Let me hear that again. I want to hear the "s" at the end of these words.

Quiero oír eso otra vez. Quiero oír la "ese" (s) al fin de estas palabras.

Which side of the card has more ________?

¿Cuál lado de esta carta tiene los mas ________?

BREAK

3.0 Remember yesterday we talked about words that tell how we feel?

¿Se recuerdan que ayer hablamos de palabras que nos dicen como nos sentimos?

DAY 16 - Concepts: Plurals - one, more than one, 2, 3; Review of feelings.

Language:

Review and contrast of sh and ch sounds.

1.0 (Cards for sh, then ch.)

1.1 Minimal pairs:

chair - share
chin - shin
chip - ship
cheep - sheep

2.1 (Lancaster cards demonstrating plurals: Begin with train (tren). Repeat the dialogue in Spanish the first time, then in English.)

shoes - 68 1-2
coats - 69 1-2
shirts - 70 1-3
jackets - 71 1-3
purses - 75 1-3

sweaters - 76 1-3
ties - 77 1-4
belts - 78 1-4
embrellas - 79 1-3
suits - 80 1-2

BREAK

3.0 (Ditto on feelings from Lancaster Lesson 5.)

DAY 16 (continued)

Here is a boy.

Aquí está un muchacho.

He feels __________. He looks __________.

El siente __________. El parece __________.

Now make a mark on the __________ that looks _________.

Ahora hagan un marca en el ________ que parece _______.

DAY 17

1.0 Listen to these words first:

Escuchen las palabras primero y después repítanlas:

1.1 Ready? Now repeat them when I say them.

¿Listos? Ahora, repítanlas cuando yo las diga.

Remember to say them after I say them.

Recuerden, repítanlas después de que yo las diga.

2.0 Remember that everything in the world has a size?

¿Recuerdan que todo en el mundo tiene su tamaño?

The words we used when we talked about two things together or three things together are words like "big, bigger, biggest;" or "little, littler, littlest."

Cuando hablamos de cosas grandes y vemos dos o tres de la misma cosa decimos: "grande, más grande, grandísimo." Igualmente cuando hablamos de cosas pequeñas, decimos "pequeña, más pequeña y pequeñísima. En inglés, decimos "big, bigger, biggest" or "little, littler, littlest."

2.1 Let's look at these pictures.

Miremos estos cuadros.

BREAK

3.0 Children, everything in the world has a quantity or number.

Niños, todo en el mundo tiene su cantidad.

If we count anything, we know its quantity or number.

Si contamos cualquier cosa, sabemos su cantidad.

Today we are going to begin counting.

Hoy vamos a comenzar a contar.

DAY 17 - Concepts: Quantity and number; Comparative relationships - size

Language:

Counting to 5; Comparisons of adjectives; Review of ch vs. sh sounds; Review of plural endings.

1.0 (Minimal pairs):

chatter	shatter
cheer	sheer
cherry	sherry
chock	shock

1.1 (Same minimal pairs as above.)

2.0 "This is a big bear."
"This is a little bear."

"This is a big bear."
"This is a bigger bear."
"This is the biggest bear."

Also Lancaster Cards:

Plane - 263
Elephant - 265
Bed - 246

"This bear is big."
"This bear is bigger."
" This bear is biggest."

BREAK

DAY 17 (continued)

3.1 Look at these balls.

Miren a estas pelotas.

Here is one ball.	Aquí está una pelota.
Here are two balls.	Aquí están dos pelotas.
Here are three balls.	Aquí están tres pelotas.
Here are four balls.	Aquí están cuatro pelotas.
Here are five balls.	Aquí están cinco pelotas.

3.2 Let's look at these cards of animals.

Miremos a estos cuadros de animales.

DAY 17 - Directions (continued)

3.1 "How many blue balls are there?"
"How many big balls are there?"

(Continue with all colors, through 5 using the color and size.)

(Use individual flannel boards. Let children count colored balls on them.)

3.2 (Review "more-than-one", emphasize plural endings the "-s", introduce and expand vocabulary, and begin counting from 1-5.) Lancaster Cards:

2 burros - 86
4 pigs - 187
3 monkeys - 888
2 tigers - 87

3 rabbits - 81
4 turkeys - 184
2 lions - 85
2 horses - 83
3 dogs - 82

4 turtles - 84
2 camels - 87
3 crows - 92
4 mice - 93

DAY 18

1.0 Remember that we spoke of different ways of making sounds with our mouths and lips?

¿Se recuerdan que hablamos de diferentes modos de hacer sonidos con nuestras bocas y labios? (Illustrate a few.)

Now listen carefully to the way I say each word.

Ahora escuchen del modo que digo cada palabra.

Can you hear the difference in the beginning of each word?

¿Pueden oír las diferencias al principio de cada palabra?

Now you say it.

Ahora ustedes díganlas.

1.1 Repeat these words after I say them.

Repitan estas palabras después que yo las diga.

2.0 Everyone sit in a circle here on the floor. Let's look at the paper circles on the flannelboard.

Todos siéntense alrededor de este círculo que está en el suelo. Veamos a estos círculos de papel en la tabla de flanela.

BREAK

2.1 We want to know the number of things on these cards.

Queremos saber la cantidad de cosas en estas cartas.

How do we know the number of things? Very Good!

¿Como sabemos la cantidad de cualquier cosa? ¡Muy bien!

Yes, we know the number of things if we count the things.

Sí, sabemos la cantidad si contamos las cosas.

Let's count these pictures in order to know how many there are.

Contemos estas cartas para saber la cantidad.

DAY 18 - Concepts: Review of quantity or number.

Language:

Sounds y-j contrasting; Review comparison;
Progressive of verbs; Review of counting.

1.1 (Minimal pairs): jam - yam joke - yoke
jell - yell jello - yellow
jet - yet jarred- yard

2.0 (Use circles of different colors on the flannel board; Review numbers.)

BREAK

2.1 (Use animal cards from day 17.)

DAY 18 (continued)

3.0 Here are some cards that show people doing things.

Aquí están unas cartas que muestran personas haciendo varias cosas.

Let's tell what they are doing.

Contemos que están haciendo.

3.1 Now I am going to ask you to do these things.

Ahora les voy a preguntar que hagan estas cosas.

3.2 See if you can guess what I ask one of you to do.

Traten de adivinar lo que quiero que haga uno de sus amiguitos.

DAY 18 - Directions (continued)

3.0 (Use cards from lesson 13 in Lancaster program #113-151. Stress the -ing ending.)

3.1 (Whisper in the ear of Joe, have him do an action, then have others tell what he does.)

DAY 19

1.0 I am going to repeat some pairs of words. Listen carefully for the difference between the two words in each pair.

Voy a decir unos pares de palabras. Escuchen y pongan atención a la diferancia entre las dos palabras.

How are they different?

¿De qué modo son diferentes?

One has another sound at the end. Can you hear the sound?

Una tiene otro sonido al fin. ¿Pueden oír ese sonido?

1.1 Now repeat the words after I say them.

Ahora repitan las palabras después de que yo las diga.

1.2 Children, time is very important in our world.

Niños, el tiempo es una cosa muy importante en nuestro mundo.

We need to know when things happen.

Necesitamos saber cuando pasan ciertas cosas.

We use certain words to tell what we do now, right now, and others to tell what we did yesterday.

Usamos ciertas palabras para indicar cuando hacemos algo en este momento, y otras para indicar que pasó ayer.

1.3 Listen well.

Escuchen bien.

Today Juan walks into the room. But yesterday he walked into the room.

Hoy Juán entra a nuestro cuarto. Pero ayer, él entró a nuestro cuarto.

BREAK

DAY 19 - Concepts: Time--present and past.

Language:

Present and past tenses of regular verbs; the G-sound.

1.0 (Minimal pairs for regular, present and past):

walk - walked
bow - bowed
close - closed
open - opened
jump - jumped

1.2 Ask a child to "close the door."
"What did _____ do?"
"He closed the door."

(Use the above verbs as examples also.)

BREAK

DAY 19 (continued)

2.0 Another word for a big bell is a "gong". Let's all make the sound of the big bell, "gong, gong, gong."

Otra palabra para una campana en inglés es "gong". Hagan el sonido de la campana, "gong, gong, gong."

2.1 Here are some words that begin with the sound of the big bell.

Aquí están unas palabras que comienzan con el sonido de la campana.

DAY 19 - Directions (continued)

2.0 (Have a picture of a big bell.)

2.1 Lancaster cards:

garden - 300
gate - 182
girl - 155
glass - 227
glove - 72
grape - 291
goat - 188

DAY 20

1.0 Here are some more pairs of words like the ones we listened to yesterday. Listen carefully for the difference between the two words.

Aquí están algunos pares de palabras como escucharon ayer. Otra vez traten de notar la diferencia entre las dos palabras.

How are these words different?

¿Qué es la diferencia?

One has another sound at the end. Can you hear the sound?

Uno tiene otro sonido al fin. ¿Pueden oír el sonido diferente?

Now repeat the words after I say them.

Ahora repitan las palabras después que yo las diga.

1.1 Now we are going to try to guess what ______ does.

Ahora vamos a tratar de adivinar que hace ______.

Let's watch to see what ______ does.

Veamos que hace ______.

BREAK

2.0 Remember that everything in the world has a size.

¿Se recuerdan que todo en el mundo tiene su tamaño y como hablamos de tamaño?

We said big, bigger, and biggest, or little, littler, and littlest.

Para cosas grandes dijimos grande, más grande, y grandísimo. Para cosas pequeñas dijimos pequeña, más pequeña, y pequeñísimo.

We call words like big and little opposites.

Palabras como grande y pequeno son opuestas.

DAY 20 - Concepts: Opposites in qualitative relationships; Mutual exclusion of opposites.

Language:

Review of past tense of regular verbs; Opposites in descriptive relationships.

1.0 (Minimal pairs for regular present and past):

call - called walk - walked
ask - asked bow - bowed
carry - carried close - closed
learn - learned open - opened
look - looked jump - jumped

1.1 Whisper to _____: "_____, open the door."
"What did _____ do?"
"He opened the door."

BREAK

2.0 A. (Use opposites on Lancaster Cards #157-168.)

B. (Objects to be used to illustrate some opposites):

fast - slow
old - new -clothes
hard - soft -cotton & rocks
noisy - quiet -records
clean - dirty -clothes
wet - dry -wash cloths
long - short -string
heavy - light -rocks & cotton in boxes
hot - cold -hot water & ice
fat - skinny -picture of clowns
smooth - rough -sandpaper & magazine page

DAY 20 (continued)

Opposites are things that are very different.

Opuestos son cosas muy diferentes.

Let's look at these boxes.

Miremos a estas cajas.

This box is little. If a box is little it is not big.

Esta caja es pequeña. Si una caja es pequeña, no es grande.

If a box is big, it is not little.

Si una caja es grande, no es pequeña.

Let's call say "opposites".

Repitamos todos "opposites" en ingles.

2.1 Here are some other words which are opposites.

Aquí están otras palabras que son opuestas.

2.1 (Use the sentence):

"If something is slow, it is not fast."
"If something is fast, it is not slow."

(Continue with other opposites from the examples shown on previous page.)

DAY 21

1.0 Remember, children, that time is very important in our world. Time is so important that we use different words to indicate when things happen. We use one word for what happened before, and another word for what is happening now.

Recuérdense niños, que tiempo es muy importante en nuestro mundo. El tiempo es tan importante que usamos differentes palabras para indicar cuando cosas pasan. Usamos una palabra cuando queremos decir que algo ha pasado, y otra palabra cuando queremos decir lo que está pasando ahorita.

1.1 Let's ask ______ to walk to the door.

Preguntémosle a ______ que camine a la puerta.

What is happening now?

¿Qué está pasando ahora?

What has happened already?

¿Qué ha pasado?

BREAK

2.0 We have words we use to tell how things look.

En este mundo tenemos palabras que nos ayudan a reconocer objetos.

2.1 Let's look at these cards and use words that tell how they look.

Miremos a estas cartas y usemos algunas palabras que nos dicen como las cosas parecen.

2.2 Here is a paper with some pictures of children and boxes.

Aquí tenemos algunos fotos de niños y cajas.

Put your paper markers under the first row of pictures.

Pongan sus marcadores abajo de la primera fila.

DAY 21 - Concepts: Review of time; Comparative relationships - quantity, size, quality.

Language:

Review of past tense of regular verbs.

1.1 "_______, walk to the door."
What is _______ doing?
What did _______ do?

(Also use: skip, hop, count, move, brush.)

BREAK

2.0 heavy, heavier, heaviest
fat, fatter, fattest
thin, thinner, thinnest
long, longer, longest

tall, taller, tallest
short, shorter, shortest
pretty, prettier, prettiest
ugly, uglier, ugliest

2.2 (Use ditto for lesson 25 - Lancaster program.)

DAY 21 (continued)

This box is heavy.

Esta caja pesa mucho.

Which box is heavier?

¿Cuál de las cajas pesa más?

Which box is heaviest?

¿Cuál de las cajas es pesadísima?

Which box is lightest?

¿Cuál de las cajas es la más liviana?

Put a circle around the ______ box.

Pongan un círculo alrededor de la caja ______.

DAY 21 - Directions (continued)

"This box is heavy."
"This box is heavier."
"This box is heaviest."

"This box is small."
"This box is smaller."
"This box is smallest."

DAY 22

1.0 Many things in the world are not alike.

Muchas cosas en el mundo no son iguales.

1.1 Let's look at these apples.

Miremos estas manzanas.

How are they alike?

¿De qué modo son iguales?

How are they different?

¿De qué modo son diferentes?

We can use words to describe how things are alike and how they are different.

Podemos usar palabras para describir como las cosas son iguales y como son diferentes.

1.2 Let's look at these vegetables.

Miremos estos vegetales.

How are they alike?

¿De qué modo son iguales?

How are they different?

¿De qué modo son diferentes?

Remember, we can use words to describe how things are alike and how they are different.

Recuerden que podemos usar palabras para describir como las cosas son iguales y como son diferentes.

1.3 Let's look at these cards. Here we see __________.

Miremos estas cartas. Aquí vemos __________.

Are the objects alike or different?

¿Son estos objetos iguales o diferentes?

BREAK

DAY 22 - Concepts: Review of opposites;
alike vs. different.

Language:

Past tense of some irregular verbs.

1.0 (Use green, red and speckled apples, one of each.)

1.2 (Use peas, beans and squash.)

1.3 (Use cards 157-168 - Lancaster program--opposites.)

fast - slow
old - new
hard - soft
noisy - quiet
long - short
heavy - light
hot - cold
smooth - rough
fat - thin
clean - dirty
wet - dry

BREAK

DAY 22 (continued)

2.0 Remember, we said last week that time is very important in our world.

Recuerdan ustedes que la semana pasada dijimos que el tiempo es muy importante en nuestro mundo.

We need to know when certain things happened.

Necesitamos saber cuando pasaron ciertas cosas.

We use certain words to tell when we do something right now, and other words to tell what happened yesterday.

Usamos ciertas palabras para indicar cuando hacemos una cosa ahora en este momento, y usamos otras palabras para indicar que pasó ayer.

2.1 I am going to say some pairs of words. Listen carefully and pay attention to the difference between the two words in each pair.

Voy a decir algunos pares de palabras. Escuchenme cuidadosamente y pongan atencion a la diferencia entre las dos palabras en cada par.

2.2 Now we are going to talk about what we do, using these words.

Ahora, hablemos de lo que hacemos usando estas palabras.

DAY 22 - Directions (continued)

2.1 (Irregular past tense: eat-ate, buy-bought, bring-brought, come-came, go-went; stress that one means right now, and the other means in the past.)

2.2 (Examples of sentence patterns):

I eat my apple for lunch.
Yesterday I ate my apple for lunch.

Mother buys food.
Yesterday she bought food.

Javier, bring me the chair. What did Javier do?
Javier already brought me the chair.

Do you come to school every day?
Did you come to school last week?

_______ goes to open the door.
_______ already went to open the door.

DAY 23

1.0 Remember that time is very important in our world.

Recuerden ustedes que el tiempo es muy importante en nuestro mundo.

We use certain words to tell when we do something right now, and other words to tell what happened yesterday.

Usamos ciertas palabras para indicar cuando hacemos una cosa ahora, y usamos otras palabras para indicar que pasó ayer.

1.1 I am going to say some pairs of words. Listen carefully and pay attention to the difference between the two words in each pair.

Voy a decir algunos pares de palabras. Escúchenme cuidadosamente y pongan atencion a la diferencia entre las dos palabras en cada par.

1.2 Now repeat the words after I say them.

Repitan las palabras después de que yo las diga.

1.3 Let's try to guess what ______ does.

Vamos a trater de adivinar lo que haga ______.

BREAK

2.0 Remember that many things in the world have a sound or make a sound.

Recuerden ustedes que muchas cosas en el mundo hacen o tienen su sonido.

We have been learning words with different sounds.

Hemos aprendido palabras que tienen sonidos diferentes.

Hear the sound we make when we put our tongue between our teeth and say "THIS".

¿Pueden oír el sonido que hacemos cuando ponemos nuestra lengua entre nuestros dientes y decimos "THIS"?

DAY 23 - Concepts: Review of quantity or number

Language:

Th sound; Review of counting to 5; Past tense of additional irregular verbs.

1.0 run-ran, sit-sat, think-thought, throw-threw, sleep-slept.

1.3 (Play a game with these words, asking the children to do the action and then tell what they did, using the correct verb form.)

BREAK

DAY 23 (continued)

2.1 Now form a circle. We are going to play a game around the circle.

Ahora, formen un círculo. Juguemos un juego alrededor del círculo.

3.0 Everyone sit down. Here is a paper for you.

Siéntense todos. Aquí tengo un papel para ustedes.

Find the two ________.   Encuentren los dos _______.
Which are the two_____?   ¿Cuales son los dos_______?
Put a circle around the two__________.
Pongan un círculo alrededor de los dos__________.

DAY 23 - Directions (continued)

2.1 (Use "th" words for the sentences to be passed around. Say a short sentence and have each child repeat it. Some usable words are: this, that, thorn, thin, think, throw, thick, thistle, thread, thigh, thief, thousand.)

3.0 (Have crayons ready, with dittos of one, two, and three. See ditto from Lancaster program, lesson 12.)

(Do the same for 1 and 3 after 2.)

DAY 24

1.0 Children, do you remember that everything in the world has a name? And that everything in the world has a color? And that almost everything in the world can be counted? And that we can talk about size?

Niños, ¿recuerden que todas las cosas en el mundo tienen un nombre? ¿Y que todas las cosas en el mundo tienen su color? ¿Y que todas las cosas en el mundo tienen su numero, lo que podemos contar? ¿Y que podemos hablar del tamaño de objetos?

2.0 Let's talk about the colors of things.

Vamos a hablar de los colores de cosas ahora.

What color is this box?

¿De qué color es esta caja?

Who has a dress or shirt of this color?

¿Quién lleva un vestido o camisa de este color?

2.1 _____, put the (color) circle on the board.

_____, ponga el círculo ________ en la tabla.

BREAK

3.0 Now let's talk about these cards.

Ahora vamos a hablar de estas cartas.

4.0 Here is a paper for you.

Aquí está un papel para ustedes.

Let's look at the first row. What are these?

Miremos a la primera fila. ¿Qué son estos?

Let's look at the second row. What are these?

Miremos a la segunda fila. ¿Qué son estos?

Put a circle around the clown that is the funniest.

Pongan un círculo alrededor del payasa que es el más divertido.

DAY 24 - Concepts: Review of quantity or number;
Review of classification by size and by color.

Language:

Review of color; Review of counting to 5;
Review of comparisons.

2.0 (Use boxes with toys, and circles. Repeat with each box, and then ask the children to place "x" number of circles of each color on the flannelboard.)

2.1 How many big circles are there on the board? Let's count them. Now, how many big circles are there on the board? That's right, there are ___ big circles on the board.

Which circle is the biggest?
This circle is the biggest.

Which circle is the littlest?
This circle is the littlest.

How many little yellow circles are there on the board? (Continue with other colors.)

BREAK

3.0 (Use scenes on Lancaster cards, numbers:

169, 173, 174, 175, 176, 178, 180, 181, 207, 210, 214, 215, 216, 217, 219, 220, 241, 248, 237, 238)

4.0 Use comparison ditto for Lesson 25, Lancaster:

funny, funnier, funniest, big, bigger, biggest.

DAY 24 (continued)

Put a circle around the tiger that is bigger that this tiger.

Pongan un círculo alrededor del tigre que es más grande que este tigre.

DAY 25

1.0 We have learned many new words about things in our world.

Hemos aprendido muchas de las palabras nuevas que usamos en nuestro mundo.

Some words tell us about the size of things. Some words tell us about the color of things. Some words tell us about the number.

Algunas palabras nos indican el tamaño de las cosas. Algunas palabras nos indican el color de las cosas, y algunas palabras nos indican el número de cosas.

1.1 Today we are going to use some of these words.

Hoy vamos a usar algunas de estas palabras.

DAY 25 - Concepts: Overall review
Language:
Overall review

1.1 (Use these cards from the Lancaster program:

169
173
174
175
176
178
180
181
207
210
214
215
216
217
219
220
241
248
237
238

These cards are scenes. The class talks about each scene. Elicit the colors, numbers, size, location, and comparisons.)

APPENDIX B

BARCLAY TEST

Barclay
Grant 7-I-035

Name____________________

Directions: Finish what I want to say. (In each instance point to the appropriate picture as you say the words.)

1. This road is long. That one is ______________.
   That one is the __________________.

2. This woman is tall. This woman is ______________.
   Of all of them, this woman is the ______________.

3. This boy is carrying a heavy box. But the box this boy is carrying is ______________.
   And this box is the ______________.

4. This scarecrow is big. This scarecrow is ______________.
   This scarecrow is the ______________.

Directions: Tell me the opposite.

5. This girl's chair is soft. That one is not soft. It is ______________.

6. This lady is pretty. That one is not pretty. She is ______________.

7. This boy is running. That one is not running. He is ______________.

8. These children are noisy. Those children are __________.

9. This washcloth is dry. That one is ______________.

10. These hands are clean. Those are ______________.

11. This boy is hitting something hard. The other boy is hitting something ______________.

12. Mary's books are light. Judy's books are ______________.

13. These dishes are dirty. Those dishes are ______________.

Directions: Finish what I want to say.

14. This boy jumps over the can. He is _______________.

15. What does Mary do? She _______________.

16. What is this girl doing? She is _______________.

17. Here is a boy who reads the funnies. He is ____________.

18. This boy is singing. Yesterday he did the same.
Yesterday he _______________.

19. This girl washes her face. Here she is _______________.

20. The boy washes his hands. His face is already __________.

21. What does this girl do with the dishes? She ___________.

22. This girl likes to read. She did the same yesterday.
Yesterday she _______________.

23. This girl is sewing. Yesterday she also _______________.

ADDITIONAL SPEECH SOUND ITEMS

Barclay
Grant 7-I-035

Purpose: To determine the child's ability to identify similarity and difference in acoustic value of familiar words which can be pictures.

Materials: 19 pairs of ink-line drawings.

Procedure: Present to the child a pair of ink line drawings posted on a single card. Say to the child, SHOW ME __________(which is the underlined word in each pair). The child is to point to the picture of the word named by the Examiner. For example, a card containing a picture of a box and a picture of some blocks is presented to the chile while the examiner says SHOW ME BLOCKS. Do not use articles (e.g., a, the, etc.). Follow this same procedure for all 19 pairs of pictures. Encourage the child to point to the picture, not to tell about the picture. If the child looks up as if asking for help, or if the child indicates he didn't hear, the direction SHOW ME______ can be repeated a second time only.

Write a "+" for each correct response. Write a "O" for each incorrect response.

Name____________________

1.	Pin	Bin	__________
2.	Time	Dime	__________
3.	Chair	Share	__________
4.	Ice	Eyes	__________
5.	Think	Sink	__________
6.	Joke	Yolk	__________
7.	Fat	Vat	__________
8.	Pick	Pig	__________
9.	Yellow	Jello	__________
10.	Bat	Vat	__________
11.	Choke	Joke	__________
12.	Eat	Heat	__________
13.	Singer	Finger	__________
14.	Fan	Van	__________
15.	Pen	Pan	__________
16.	Cop	Cup	__________
17.	Cube	Cub	__________
18.	Foot	Feet	__________
19.	Cap	Cup	__________

TRAGER LINGUISTIC QUESTIONNAIRE

Barclay
Grant 7-I-035

Name______________________

Directions: Give commands to the child and wait for him to carry them out. When the child has finished have him tell you, the examiner, what he has just done. Record the child's exact words.

1. Jump up

2. Walk around the chair

3. Give me the book

4. Stick your tongue out

5. Touch your stomach

APPENDIX C

TABLE 63A

2 x 4 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--POSTTEST ALL GROUPS

e	Sum of Squares	DF	Mean Square	F Ratio	P
er	1.94	1	1.94	0.03	
ment	364.50	3	121.50	2.09	
er x Treatment	368.44	3	122.81	2.11	
iate	380.63	1	380.63	92.65	.01
ual	3368.00	58	58.07		
	11807.21	66			

(1,58) ≥ 4.02 or F (3,58) ≥ 2.78 P <.05
(1,58) ≥ 7.12 or F (3,58) ≥ 4.16 P <.01

TABLE 63B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	Spanish	English	Bilingual	Control
er 1	26.56	26.33	30.36	29.75
er 2	25.33	25.38	47.57	36.78
	26.07	25.88	37.05	33.47

TABLE 64A

2 x 4 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC SUBTEST--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	6.21	1	6.21	0.77	
Treatment	62.28	3	20.76	2.55	
Teacher x Treatment	75.33	3	25.11	3.13	.05
Covariate	60.99	1	60.99	7.61	.01
Residual	464.86	58	8.01		
Total	730.45	66			

F (1,58) $\geq$ 4.02 or F (3,58) $\geq$ 2.78 P <.05
F (1,58) $\geq$ 7.12 or F (3,58) $\geq$ 4.16 P <.01

TABLE 64B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL AUTOMATIC SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	5.33	4.67	4.82	5.75
Teacher 2	7.50	2.75	9.43	5.67
Both	6.11	3.77	6.56	5.71

TABLE 65A

2 x 4 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION SUBTEST--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	163.12	1	163.12	20.37	.01
Treatment	6.74	3	2.25	0.28	
Teacher x Treatment	14.48	3	4.83	0.60	
Covariate	157.46	1	157.46	19.65	.01
Residual	464.43	58	8.01		
Total	1010.42	66			

$F(1,58) \geq 4.02$ or $F(3,58) \geq 2.78$ $P < .05$
$F(1,58) \geq 7.12$ or $F(3,58) \geq 4.16$ $P < .01$

TABLE 65B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	5.33	6.00	6.73	8.00
Teacher 2	10.33	8.50	12.43	11.33
Both	7.33	7.18	8.95	9.76

TABLE 66A

2 x 4 ANALYSIS OF COVARIANCE OF BARCLAY TEST--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	2.06	1	2.06	0.14	
Treatment	77.05	3	25.68	1.78	
Teacher x Treatment	131.33	3	43.78	3.04	.05
Covariate	521.34	1	521.34	36.16	.01
Residual	836.26	58	14.42		
Total	1676.12	66			

$F(1,58) \geq 4.02$ or $F(3,58) \geq 2.78$ $P < .05$
$F(1,58) \geq 7.12$ or $F(3,58) \geq 4.16$ $P < .01$

TABLE 66B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	Spanish	English	Bilingual	Control
Teacher 1	11.78	10.33	7.91	9.63
Teacher 2	11.00	9.50	15.71	11.00
Both	11.47	9.94	10.94	10.35

TABLE 67A

2 x 4 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS A SUBTEST--POSTTEST
ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.17	1	0.17	0.14	
Treatment	1.90	3	0.63	0.52	
Teacher x Treatment	2.24	3	0.75	0.61	
Covariate	20.65	1	20.65	16.87	.01
Residual	70.96	58	1.22		
Total	100.45	66			

$F\ (1,58) \geq 4.02$ or $F\ (3,58) \geq 2.78$ $P < .05$
$F\ (1,58) \geq 7.12$ or $F\ (3,58) \geq 4.16$ $P < .01$

TABLE 67B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS A SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	2.00	2.67	2.27	2.13
Teacher 2	2.67	2.13	3.00	2.89
Both	2.27	2.45	2.55	2.53

TABLE 68A

2 x 4 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	15.45	1	15.45	4.00	.05
Treatment	16.94	3	5.65	1.46	
Teacher x Treatment	23.79	3	7.93	2.05	
Covariate	65.38	1	65.38	16.93	.01
Residual	223.94	58			
Total	380.57	66			

$F\ (1,58) \geq 4.02$ or $F\ (3,58) \geq 2.78$ $P < .05$
$F\ (1,58) \geq 7.12$ or $F\ (3,58) \geq 4.16$ $P < .01$

TABLE 68B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	5.22	5.44	4.82	3.38
Teacher 2	5.83	5.13	7.71	6.89
Both	5.46	5.29	5.94	5.24

TABLE 69A

2 x 4 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPEECH SOUND DISCRIMINATION SUBTEST--POSTTEST
ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.75	1	1.75	0.04	
Treatment	6.69	3	2.23	0.05	
Teacher x Treatment	82.13	3	27.38	0.58	
Covariate	735.00	1	735.00	15.60	.01
Residual	2733.19	58	47.12		
Total	3800.94	66			

$F (1,58) \geq 4.02$ or $F (3,58) \geq 2.78$ $P < .05$
$F (1,58) \geq 7.12$ or $F (3,58) \geq 4.16$ $P < .01$

TABLE 69B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST
SPEECH SOUND DISCRIMINATION SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	42.78	40.56	42.36	42.13
Teacher 2	40.83	42.13	46.57	46.89
Both	42.00	41.30	43.99	44.65

TABLE 70A

2 x 4 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	24.84	1	24.84	4.54	.01
Treatment	4.03	3	1.34	0.24	
Teacher x Treatment	17.97	3	5.99	1.09	
Covariate	77.13	1	77.13	14.09	.01
Residual	317.42	58	5.47		
Total	523.17	66			

F (1,58) $\geq$ 4.02 or F (3,58) $\geq$ 2.78 P $<$.05
F (1,58) $\geq$ 7.12 or F (3,58) $\geq$ 4.16 P $<$.01

TABLE 70B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	Spanish	English	Bilingual	Control
Teacher 1	12.00	10.89	11.00	11.63
Teacher 2	12.33	11.63	14.71	14.56
Both	12.13	11.24	12.44	13.18

TABLE 71A

2 x 4 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.01	1	0.01	0.01	
Treatment	3.03	3	1.01	0.71	
Teacher x Treatment	5.50	3	1.83	1.29	
Covariate	21.63	1	21.63	15.21	.01
Residual	82.50	58	1.59		
Total	116.18	66			

$F\ (1,58) \geq 4.02$ or $F\ (3,58) \geq 2.78$ $P < .05$
$F\ (1,58) \geq 7.12$ or $F\ (3,58) \geq 4.16$ $P < .01$

TABLE 71B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	Spanish	English	Bilingual	Control
Teacher 1	1.11	1.00	1.64	0.50
Teacher 2	0.83	1.13	1.71	1.77
Both	1.00	1.06	1.67	1.18

TABLE 72A

2 x 4 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--POSTTEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	23.69	1	23.69	0.56	
Treatment	211.31	3	70.44	1.67	
Teacher x Treatment	115.44	3	38.48	0.92	
Covariate	18.13	1	18.13	0.43	
Residual	2309.88	55	41.99		
Total	2751.00	63			

$F\ (1,55) \geq 4.02$ or $F\ (3,55) \geq 2.78$ $P < .05$
$F\ (1,55) \geq 7.12$ or $F\ (3,55) \geq 4.16$ $P < .01$

TABLE 72B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	Spanish	English	Bilingual	Control
Teacher 1	37.33	33.88	36.70	39.71
Teacher 2	34.67	32.00	40.43	36.56
Both	36.27	32.94	38.24	37.94

TABLE 73A

2 x 4 ANALYSIS OF COVARIANCE OF PEABODY PICTURE VOCABULARY TEST--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	5.38	1	5.38	0.07	
Treatment	43.06	3	14.35	0.18	
Teacher x Treatment	41.69	3	13.90	0.17	
Covariate	4281.44	1	4281.44	54.20	.01
Residual	3792.00	48	79.00		
Total	9114.75	56			

F (1,48) ≥ 4.04 or F (3,48) ≥ 2.80 P < .05
F (1,48) ≥ 7.19 or F (3,48) ≥ 4.24 P < .01

TABLE 73B

MEAN SCORES OF TREATMENT GROUPS PEABODY PICTURE VOCABULARY TEST

	Spanish	English	Bilingual	Control
Teacher 1	42.00	36.44	38.00	41.71
Teacher 2	39.67	34.83	47.50	46.88
Both	40.73	35.80	41.56	44.47

TABLE 74A

2 x 4 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL AUTOMATIC SUBTEST--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.32	1	0.32	0.04	
Treatment	16.58	3	5.53	0.73	
Teacher x Treatment	19.61	3	6.54	0.87	
Covariate	216.56	1	216.56	28.75	.01
Residual	361.51	48			
Total	734.14	56			

$F\ (1,48) \geq 4.04$ or $F\ (3,48) \geq 2.80$ $P < .05$
$F\ (1,48) \geq 7.19$ or $F\ (3,48) \geq 4.24$ $P < .01$

TABLE 74B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL AUTOMATIC SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	6.80	4.67	5.90	8.00
Teacher 2	6.67	3.83	9.33	7.88
Both	6.73	4.33	7.19	7.93

TABLE 75A

2 x 4 ANALYSIS OF COVARIANCE OF ITPA AUDITORY-VOCAL ASSOCIATION SUBTEST--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.04	1	1.04	0.10	
Treatment	6.82	3	2.27	0.21	
Teacher x Treatment	3.83	3	1.28	0.12	
Covariate	676.29	1	676.29	62.82	.01
Residual	516.73	48	10.77		
Total	1370.88	56			

$F\ (1,48) \geq 4.04$ or $F\ (3,48) \geq 2.80$ $P < .05$
$F\ (1,48) \geq 7.19$ or $F\ (3,48) \geq 4.24$ $P < .01$

TABLE 75B

MEAN SCORES OF TREATMENT GROUPS ITPA AUDITORY-VOCAL ASSOCIATION SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	11.40	9.00	9.80	11.29
Teacher 2	10.83	8.17	13.17	13.63
Both	11.09	8.67	11.06	12.53

TABLE 76A

2 x 4 ANALYSIS OF COVARIANCE OF BARCLAY TEST--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.58	1	1.58	0.16	
Treatment	75.69	3	25.23	2.55	.05
Teacher x Treatment	13.90	3	4.63	0.47	
Covariate	678.07	1	678.07	68.60	.01
Residual	474.44	48	9.88		
Total	1446.98	56			

$F(1,48) \geq 4.04$ or $F(3,48) \geq 2.80$ $P < .05$
$F(1,48) \geq 7.19$ or $F(3,48) \geq 4.24$ $P < .01$

TABLE 76B

MEAN SCORES OF TREATMENT GROUPS BARCLAY TEST

	Spanish	English	Bilingual	Control
Teacher 1	14.80	9.33	11.90	11.71
Teacher 2	13.00	8.83	15.67	14.50
Both	13.82	9.13	13.31	13.20

TABLE 77A

2 x 4 ANALYSIS OF COVARIANCE OF
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS A SUBTEST--FOLLOWUP TEST
ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	0.10	1	0.10	0.10	
Treatment	6.16	3	2.05	1.99	
Teacher x Treatment	2.44	3	0.81	0.79	
Covariate	17.53	1	17.53	17.02	.01
Residual	49.45	48	1.03		
Total	82.67	56			

$F\ (1,48) \geq 4.04$ or $F\ (3,48) \geq 2.80$ $P < .05$
$F\ (1,48) \geq 7.19$ or $F\ (3,48) \geq 4.24$ $P < .01$

TABLE 77B

MEAN SCORES OF TREATMENT GROUPS
VANCE LANGUAGE SKILLS TEST
SPATIAL RELATIONS A SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	3.40	2.67	3.30	3.43
Teacher 2	3.67	2.67	4.50	3.25
Both	3.55	2.67	3.75	3.33

TABLE 78A

2 x 4 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	7.39	1	7.39	1.60	
Treatment	9.54	3	3.18	0.69	
Teacher x Treatment	12.00	3	4.00	0.87	
Covariate	59.06	1	59.06	12.78	.01
Residual	221.85	48	4.62		
Total	323.05	56			

$F\ (1,48) \geq 4.04$ or $F\ (3,48) \geq 2.80$ $P < .05$
$F\ (1,48) \geq 7.19$ or $F\ (3,48) \geq 4.24$ $P < .01$

TABLE 78B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPATIAL RELATIONS B SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	8.00	7.00	7.60	7.71
Teacher 2	7.17	5.33	8.83	7.13
Both	7.55	6.33	8.06	7.40

TABLE 79A

2 x 4 ANALYSIS OF COVARIANCE OF VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	3.88	1	3.88	0.09	
Treatment	77.06	3	25.69	0.59	
Teacher x Treatment	76.00	3	25.33	0.58	
Covariate	1079.40	1	1079.40	24.74	.01
Residual	2094.63	48	43.64		
Total	3795.94	56			

$F\ (1,48) \geq 4.04$ or $F\ (3,48) \geq 2.80$ $P < .05$
$F\ (1,48) \geq 7.19$ or $F\ (3,48) \geq 4.24$ $P < .01$

TABLE 79B

MEAN SCORES OF TREATMENT GROUPS VANCE LANGUAGE SKILLS TEST SPEECH SOUND DISCRIMINATION SUBTEST

	Spanish	English	Bilingual	Control
Teacher 1	52.00	44.22	46.50	48.00
Teacher 2	48.67	45.00	53.83	52.50
Both	50.18	44.53	49.25	50.40

TABLE 80A

2 x 4 ANALYSIS OF COVARIANCE OF ADDITIONAL SPEECH SOUND ITEMS--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	3.53	1	3.53	0.77	
Treatment	1.54	3	0.51	0.11	
Teacher x Treatment	9.37	3	3.12	0.68	
Covariate	87.86	1	87.86	19.06	.01
Residual	221.21	48	4.61		
Total	333.51	56			

$F(1,48) \geq 4.04$ or $F(3,48) \geq 2.80$ $P < .05$
$F(1,48) \geq 7.19$ or $F(3,48) \geq 4.24$ $P < .01$

TABLE 80B

MEAN SCORES OF TREATMENT GROUPS ADDITIONAL SPEECH SOUND ITEMS

	Spanish	English	Bilingual	Control
Teacher 1	13.80	14.00	14.10	15.43
Teacher 2	14.00	13.33	15.33	14.38
Both	13.91	13.73	14.56	14.87

TABLE 81A

2 x 4 ANALYSIS OF COVARIANCE OF TRAGER LINGUISTIC QUESTIONNAIRE--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	1.60	1	1.60	1.01	
Treatment	2.50	3	0.83	0.53	
Teacher x Treatment	2.71	3	0.90	0.57	
Covariate	9.71	1	9.71	6.15	.05
Residual	75.74	48	1.58		
Total	92.88	56			

$F(1,48) \geq 4.04$ or $F(3,48) \geq 2.80$ $P < .05$
$F(1,48) \geq 7.19$ or $F(3,48) \geq 4.24$ $P < .01$

TABLE 81B

MEAN SCORES OF TREATMENT GROUPS TRAGER LINGUISTIC QUESTIONNAIRE

	Spanish	English	Bilingual	Control
Teacher 1	0.60	0.78	0.30	0.71
Teacher 2	1.33	0.83	1.50	0.75
Both	1.00	0.80	0.75	0.73

TABLE 82A

2 x 4 ANALYSIS OF COVARIANCE OF TEMPLIN-DARLEY TEST OF ARTICULATION--FOLLOWUP TEST ALL GROUPS

Source	Sum of Squares	DF	Mean Square	F Ratio	P
Teacher	15.00	1	15.00	0.21	
Treatment	171.50	3	57.17	0.80	
Teacher x Treatment	263.13	3	87.81	1.23	
Covariate	792.38	1	792.38	11.14	.01
Residual	3130.88	44	71.16		
Total	4907.50	52			

$F\ (1,44) \geq 4.06$ or $F\ (3,44) \geq 2.82$ $P < .05$
$F\ (1,44) \geq 7.24$ or $F\ (3,44) \geq 4.26$ $P < .01$

TABLE 82B

MEAN SCORES OF TREATMENT GROUPS TEMPLIN-DARLEY TEST OF ARTICULATION

	Spanish	English	Bilingual	Control
Teacher 1	41.60	29.44	38.25	40.40
Teacher 2	36.00	34.00	42.83	39.00
Both	38.55	31.26	40.21	39.54

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